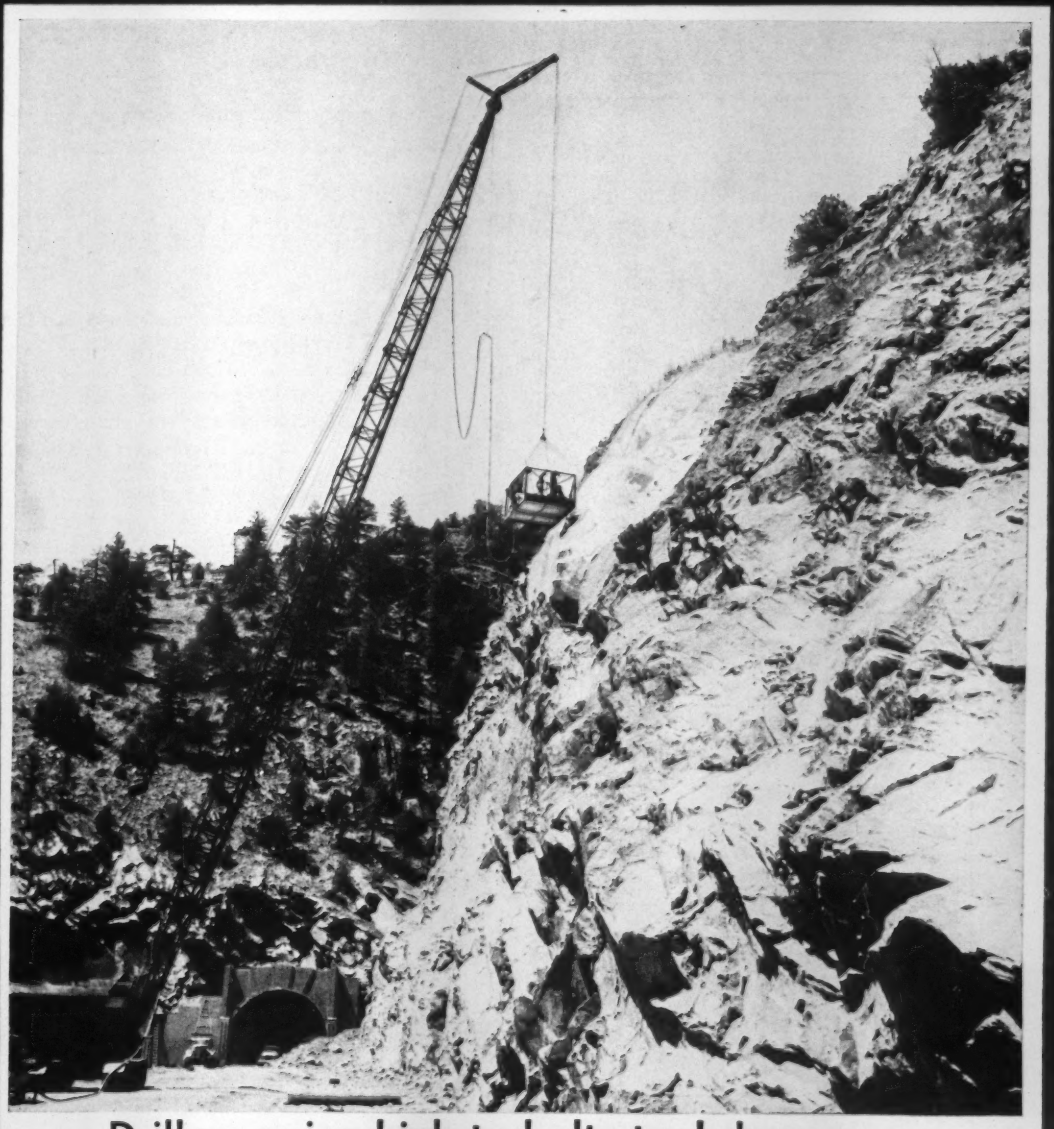
ENGINEERING NEWS-RECORD

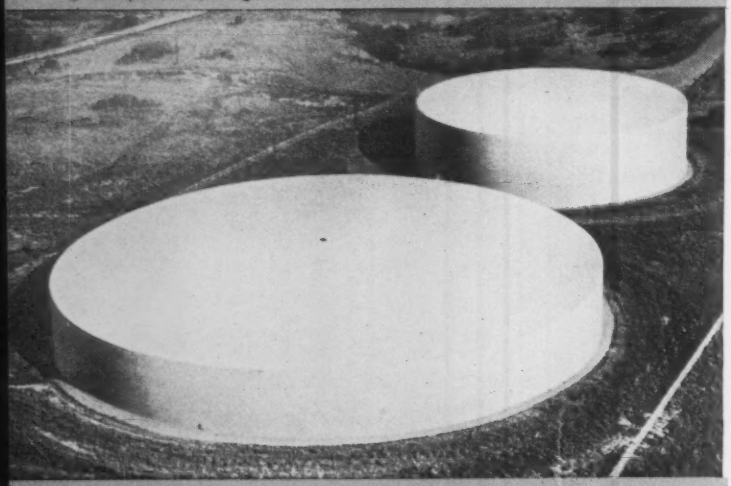


Drillers swing high to bolt steel drapes ...

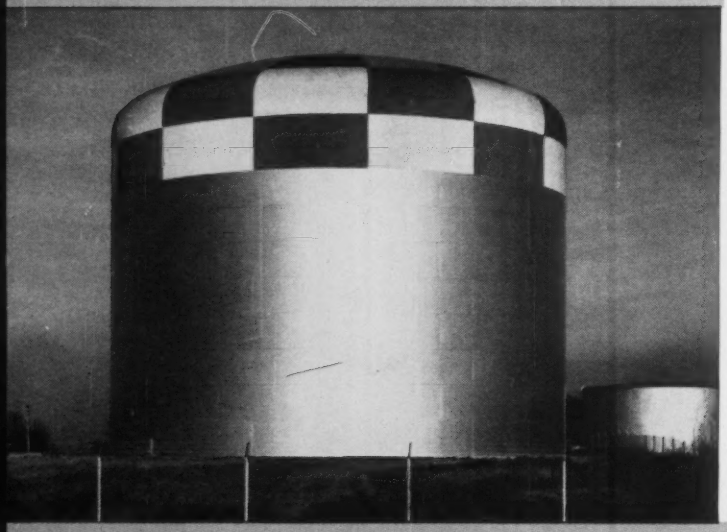
A McGRAW-HILL PUBLICATION

STEVENS RICE GS N
UNIV MICROFILMS INC ANN
313 N FIRST ST
ANN ARBOR MICH C 4-5

Reservoir (foreground) 15,000,000 gallons. Dia. 285'. Reservoir (background) 10,000,000 gallons. Tulsa, Okla.



Reservoir, 7,268,000 gallons. Dia. 116', ht. 95'. Mifflin Township, Pa.



WHERE THE TERRAIN PERMITS—

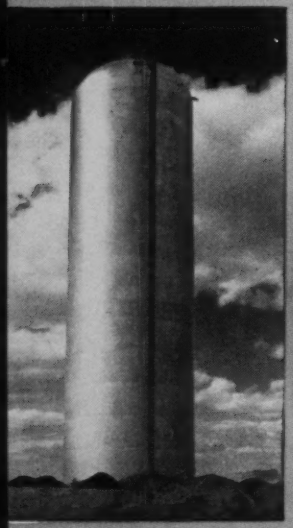
you can obtain rock-bottom economy in water storage with

PDM STEEL COMPANY

Steel Reservoirs and Standpipes

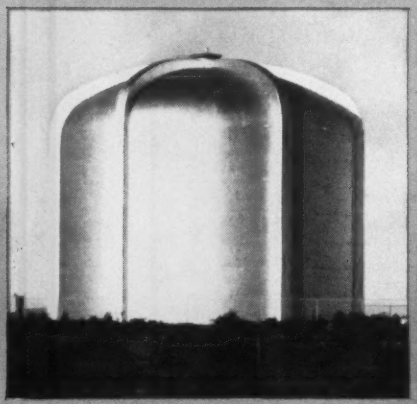
Basic economy in water storage is obtained when natural elevations permit construction at grade of standpipe or reservoir units. PDM offers a complete range of types and capacities, from the simplest utilitarian designs to ornamental structures harmonizing with high-value residential areas. Let a PDM engineer discuss your individual requirement and recommend a fitting solution. Write us—and ask for our illustrated Reservoir and Standpipe bulletin.

Standpipe, 500,000 gallons. Dia. 29'6", ht. 100'. West York, Pa.

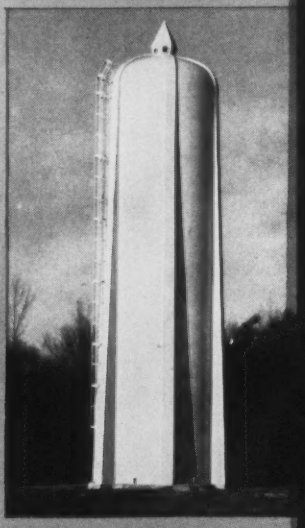


Reservoir, 300,000 gallons. Dia. 42', ht. 29'3". Liberty, N.Y.

Reservoir, 2,220,000 gallons. Dia. 80', ht. 51'. Midland, Texas.



Standpipe, 225,000 gallons. Dia. 22', ht. 80'. Arlington County, Va.



Pittsburgh-Des Moines Steel Company

Plants at PITTSBURGH, WARREN, BRISTOL, PA. • BALTIMORE • BIRMINGHAM • DES MOINES
PROVO, UTAH • CASPER, WYO. • SANTA CLARA, FRESNO, STOCKTON, CALIF.

PITTSBURGH (25)	Neville Island	EL MONTE, CALIF.	P.O. Box 2012
WARREN, PA.	P.O. Box 660	NEW YORK (17)	200 East 42nd Street
BALTIMORE (26)	P.O. Box 3459, Curtis Bay Station	NEWARK (2)	744 Broad Street
BIRMINGHAM (8)	P.O. Box 8641, Ensley Station	CHICAGO (3)	679 First National Bank Bldg.
DES MOINES (8)	1015 Tuttle Street	ATLANTA (5)	361 East Paces Ferry Rd., N.E.
PROVO, UTAH	P.O. Box 310	DALLAS (1)	Suite 1703, Southland Center
SANTA CLARA, CALIF.	P.O. Box 329	DENVER (2)	323 Railway Exchange Bldg.
SEATTLE (1)	500 Wall Street		

NOW! Goodyear off-the-road tires give you the protection of steel to minimize cuts and cut growth!

Here's important news! The Super Road Lug and other Goodyear construction equipment tires now give you *shredded wire undertreads!* That means, with the Super Road Lug, for instance, you get:

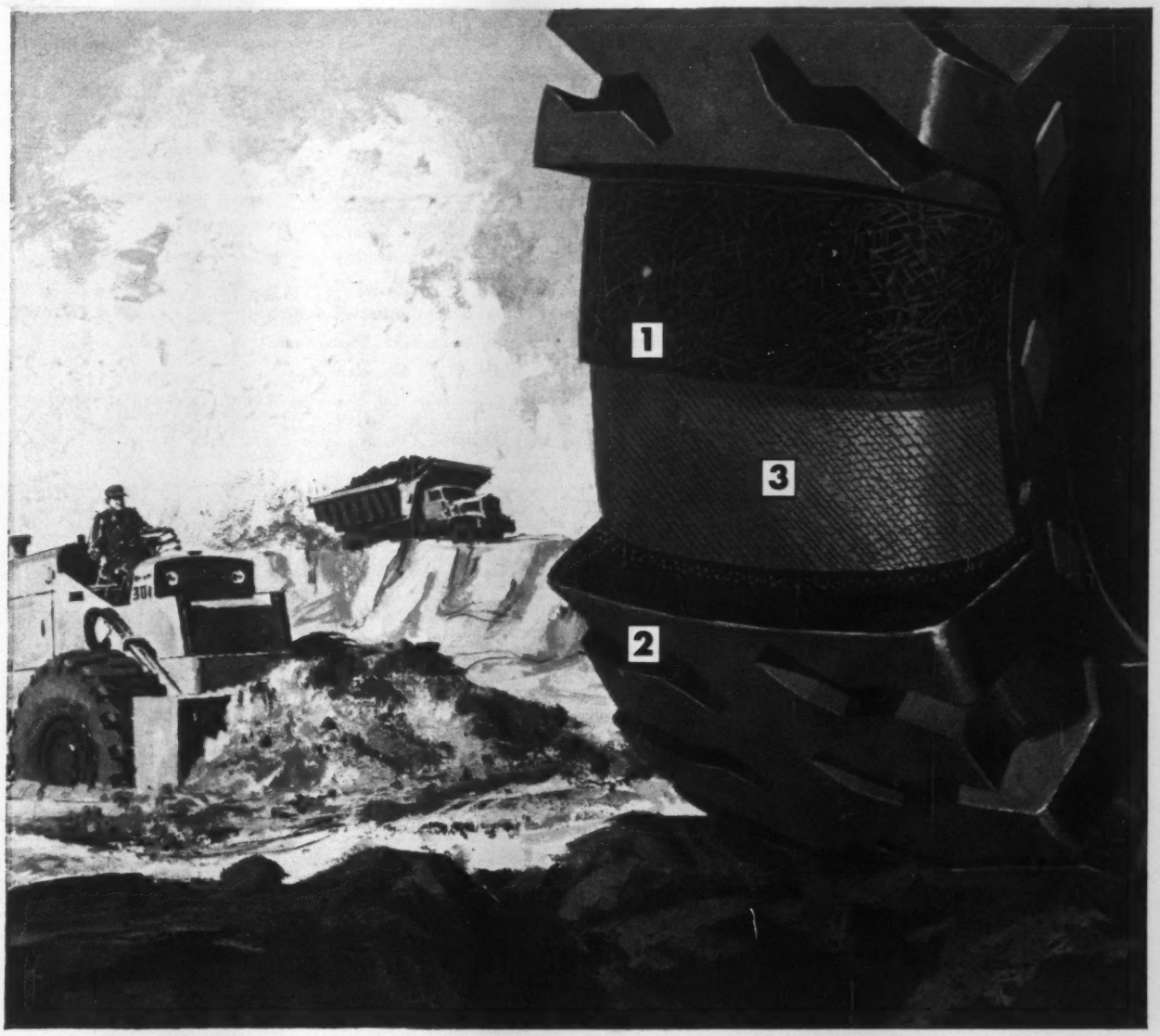
1 **A rugged shredded wire barrier** that fights body-penetrating cuts, reduces separation, retards cut growth and serves as a cushioning bridge between the carcass and the tread. This gives you a tougher, longer-lasting construction that pays off in more service!

2 **An extra-thick tread** with up to 50% more nonskid tread than ordinary tires! This gives you more miles for your dollar, more heft and traction on tough jobs!

3 **Exclusive 3-T processed Nylon Cord,** triple-tempered by Tension, Temperature and Time to make bruise-breaks and blowouts all but a thing of the past!

All these dramatic features add up to increased tire life and more miles for your tire dollar. Prove them for yourself. See your Goodyear dealer—today!

Goodyear, Truck Tire Dept., Akron 16, Ohio



Buy and Specify GOODYEAR

More tons are hauled on Goodyear Truck Tires than on any other kind

Road Lug—T. M. The Goodyear Tire & Rubber Company, Akron, Ohio

Fastest in 30 Yrs

Symons steel-ply forms provide record forming speed on big motel job

Ludwig Zahn, contractor on the new Holiday Inn, Mansfield, Ohio, reports the Symons Forming System provided faster pouring and stripping than any he has used during his 30 years in construction.

Particularly important was the king-stringer method which the contractor and the Symons engineering department devised to form the deck of the structure. King-stringers constructed of 2 x 4's bolted to 2 x 10's were 8 ft. on center. In between this were 4 x 4's supported by shores. Regular

View from "down under" showing stripping procedure. Note work space available with this type of slab system.

4-foot panels were then laid on the stringers and tied together with a Symons bolt and wedge in the center of each panel. To strip, they simply removed the 4 x 4 with its shoring and pulled down the panels. The stringer was left in position as support shoring for the required length of time.

For the *complete story, write us.* Symons forms are rented with purchase option.

Symons

SYMONS CLAMP & MFG. CO.

4265 Diversey Ave., Dept. J-1, Chicago 39, Ill.

Warehouses Thruout the U.S.A.

MORE ***SAVINGS*** *FROM* ***SYMONS***

ENGINEERING NEWS-RECORD

EIGHTY-SEVENTH YEAR OF PUBLICATION

A McGraw-Hill Publication • 330 West 42nd Street, New York 36, N.Y. • LOngacre 4-3000

Editor, Waldo G. Bowman

Managing Editor, **Arthur J. Fox, Jr.**

Senior Editors, **Frederick S. Merritt, James B. Sullivan, Leo J. Ritter, Jr.**

Transportation—Roads, Bridges, Railways, Airports, Pipelines, Ports
Leo J. Ritter, Jr., Edward M. Young, Jr., Joseph F. Wilkinson

Buildings—Commercial, Industrial, Housing; Codes, Specifications
Frederick S. Merritt, C. W. Griffin, Jr., Ronald G. Burns

Water—Sanitation, Water Supply, River Control, Power, Irrigation
James B. Sullivan, William W. Jacobus, Jr., Robert M. Echols

Business—Management, Labor, Finance, Markets, Contracts, Economics
Robert J. Stinson, Charles J. Harding

Regional Editors
J. Roland Carr, *Chicago, 645 N. Michigan Ave.* **(*MOhawk* 4-5800)**
Martha Alexander, *Staff Assistant*

Lauress L. Wise, *San Francisco, 255 California St.* **(*DOuglas* 2-4600).**
Anne Garcia, *Staff Assistant*

Copy—Production
Nancy Parkes, John C. Greenough, E. Allen Soast

Presentation
Harry W. Jensen, Robert G. Young

Statistics, Prices, Costs—Business News
Elsie Eaves, *Manager*
Julia Mahoney, *Construction Reports*
Mildred Wetzel, Marian Sciorra, Marie Moravsik
Eleanor Queret, Francine Todisco, Helene Wahlers, Arlene Spielman
James Webber, Ruth Carlson, *Economics*
William P. Larkin, T. M. Crosio, *Prices, Wages, Indexes*
Evelyn Huber, Edith Ostwald, *Statistics*
D. Arlene Ricker, *Unit Prices*

Editorial Research and Indexing
Eva Glerat, Rene Hay, Jane Jacobson

Consulting Editors: **Van Tuyl Boughton, Nathan A. Bowers**

Advertising Sales Manager: **Donald S. Robertson**

Circulation Manager: **Edward F. Bressler**

Washington Bureau, National Press Bldg., Washington 4, D. C., **(*REpublic* 7-6630),** George B. Bryant, Jr., Chief, Alan Adams, Glen Bayless, Herbert Cheshire, Boyd France, Charles Gardner, Arthur Hermann, Donald Loomis, Daniel McCrary, Gladys Montgomery, Arthur Moore, Burkey Musselman, Seth Payne, Morton Reichek, Caroline Robertson, David Secrest, Richard Smith, Vincent Smith, Harry Vandernoot, Peter Weaver

Domestic News-Bureaus: Atlanta—1375 Peachtree St., B. E. Barnes, Chief, Frances Ridgeway; **Chicago**—645 N. Michigan Ave., Stewart Ramsey, Chief, Bruce Cross, Eric Aiken; **Cleveland**—55 Public Square, Arthur Zimmerman, Chief, Violet Forsha; **Dallas**—2100 Vaughn Bldg., Marvin Reid, Chief, Mary Lorraine Smith, Mae Brown; **Detroit**—856 Penobscot Bldg., Donald MacDonald, Chief, Wesley Perry, Jr., Del Yannatta; **Los Angeles**—1125 W. 6th St., Kemp Anderson, Jr., Chief, Carl Havighorst, Michael Murphy, Marvin Petal, Bill Wallace, Mary Williams, Barbara Lamb; **San Francisco**—255 California St., Jenness Keene, Chief, Donald Winston, Marion Tracy; **Seattle**—6040 Fifth Ave., N.E., Ray Bloomberg.

Foreign News Bureaus: London—John Shinn; **Paris**—Robert Farrell; **Mexico City**—John Pearson; **Bonn**—Pete Forbath; **Tokyo**—Sol Sanders; **Rio de Janeiro**—Leslie Warren; **Moscow**—Ernest Conine.

Correspondents: In 70 principal U. S. cities and 70 cities throughout the world.
Director of News Bureaus: John Wilhelm; **Managing Editor, Margaret Ralston.**
McGraw-Hill Economics Department: Douglas Greenwald, Manager.

Publisher, Robert F. Boger

MEMBER

ENGINEERING NEWS-RECORD Vol. 167, No. 11, SEPTEMBER 14, 1961

Published weekly by McGraw-Hill Publishing Company, James H. McGraw (1860-1948), Founder. Printed at Albany 1, N. Y. See panel below for directions regarding subscriptions or change in address. **Executive, Editorial, Advertising and Circulation Offices: McGraw-Hill Building, 330 W. 42nd St., New York 36, N. Y.** OFFICERS OF THE PUBLICATIONS DIVISION: Nelson L. Bond, President; Shelton Fisher, Wallace F. Traendly, Senior Vice Presidents; John R. Callaham, Vice President and Editorial Director; Joseph H. Allen, Vice President and Director of Advertising Sales; A. R. Venezian, Vice President and Circulation Coordinator; Daniel F. Crowley, Vice President and Controller. OFFICERS OF THE CORPORATION: Donald C. McGraw, President; Hugh J. Kelly, Harry L. Waddell, Executive Vice Presidents; L. Keith Goodrich, Executive Vice President and Treasurer; John J. Cooke, Vice President and Secretary. **Subscriptions are solicited only from persons with identifiable commercial or professional interests in construction and building. Position and company connection must be indicated on subscription orders. Publisher reserves the right to refuse unqualified subscription.** United States subscription rate for individuals in the field of this publication $6.00 per year, single copies 50 cents; foreign $20 per year, payable in advance. Second-Class mail postage paid at Albany, N. Y. Printed in U.S.A. Title® registered in U.S. Patent Office. ©Copyright 1961 by McGraw-Hill Publishing Co., Inc. All rights Reserved. **UNCONDITIONAL GUARANTEE:** Our primary aim is to provide subscribers with a useful and valuable publication. Your comments and suggestions for improvements are encouraged and will be most welcome. The publisher, upon written request, agrees to refund the part of the subscription price applying to the remaining unfilled portion of the subscription—if editorial service is unsatisfactory.

SUBSCRIPTIONS: Send subscription correspondence and change of address to Fulfillment Manager, ENGINEERING NEWS-RECORD, 330 W. 42nd St., New York 36, N. Y. Subscribers should notify, publisher *promptly of any change of address, giving old as well as new address, and including postal zone number,* if any. If possible enclose an address label from a recent issue of the magazine. Please allow one month for change to become effective.

Postmaster: Please send Form 3579 to Fulfillment Manager, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

IT'S NOT A HOE . . .

IT'S A SHOVEL . . .

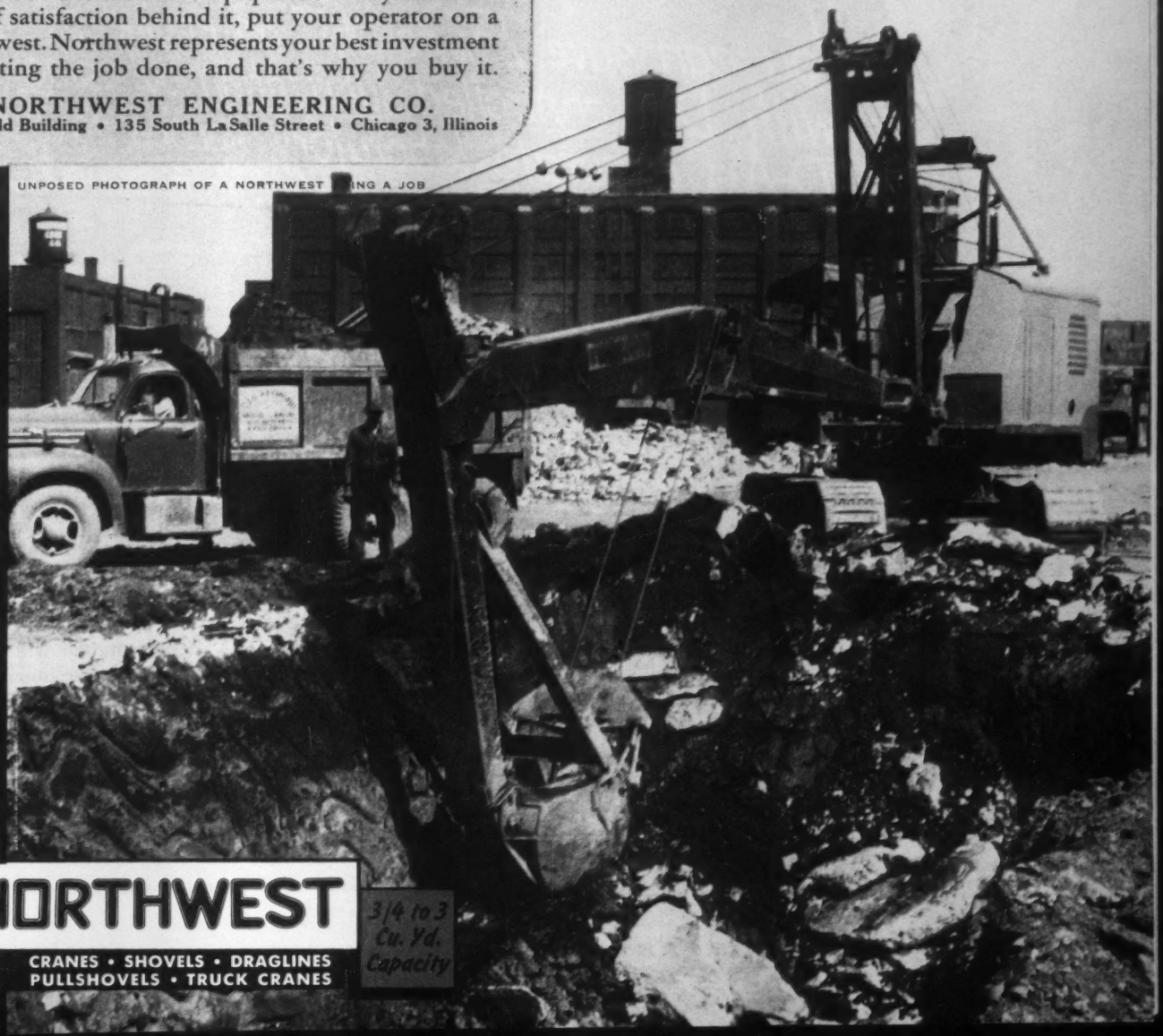
A PULLSHOVEL— It Digs!

There is a vast difference between the action of a hoe and that of a SHOVEL! A hoe scrapes, a SHOVEL DIGS! Your Northwest is a SHOVEL — a PULLSHOVEL. It is in no sense a hoe!

There is a vast difference between Pullshovels. No Pullshovel on the market has the background of on-the-job testing that Northwest Pullshovels have. No other Pullshovel can match the years of record *for getting the job done* that is Northwest's! There is a ruggedness in Northwest Cast Alloy Steel Machinery Bases that can't be produced in welded structure. The big, easily operated Uniform Pressure Swing Clutches hold the dipper where you want it in trimming a wall. The Feather-Touch Clutch Control gives that necessary feel when probing a ledge or feeling for utilities. There is power and weight for high output at great depths in the toughest digging, and you don't need any gadgets to keep a Northwest dipper in the cut.

If you are in basement excavation, sewer or pipeline work, and want the finest equipment with years of record of satisfaction behind it, put your operator on a Northwest. Northwest represents your best investment for getting the job done, and that's why you buy it.

NORTHWEST ENGINEERING CO.
1502 Field Building • 135 South LaSalle Street • Chicago 3, Illinois


UNPOSED PHOTOGRAPH OF A NORTHWEST
NG A JOB
NORTHWEST
CRANES • SHOVELS • DRAGLINES
PULLSHOVELS • TRUCK CRANES
3/4 to 3 Cu. Yd. Capacity

Reduce your ACTUAL OIL costs!
60¢ per gal. with 60 hour drain period = 60¢ actual cost.
90¢ per gal. with 180 hour drain period = 30¢ actual cost.
$1.00 per gal. with 240 hour drain period = 25¢ actual cost.
You can save 25% to 50% on engine oil with D-A controlled lubrication by using D-A's accurate laboratory service to determine maximum safe drain periods.

There are many wild claims about low cost oils and long between-drain periods, but often a higher priced lube oil has the lowest *actual* cost. Three factors—all important—govern lube oil change periods: (1) engine and operating conditions; (2) fuel used; and (3) oil quality. D-A laboratory technicians will analyze your used engine oil and your fuel . . . then recommend *maximum safe drain periods* for *your* engines. Your local D-A Representative will be glad to outline this free money-saving service. Perhaps you too can cut *actual* oil cost as much as 50%.

Remember—with more than 50 strategically located warehouses, D-A offers prompt on-the-job delivery anywhere in the United States. And, no matter where you take delivery, each D-A lubricant meets exactly the same rigid specifications . . . all D-A lubricants are compounded to the same formulas from exactly the same materials. There are no short-cuts in the production of the finest.

Lubricating heavy-duty equipment across the nation since 1919

D-A LUBRICANT COMPANY, INC. • INDIANAPOLIS 23, INDIANA

You can't legislate against carelessness!

Many businesses and industries discharge their waste products into city sewers. The strictest regulations on what may or may not be dumped into sewers can, and often are, defeated by one willful or ignorant person. You cannot tell what your sewers may be called upon to carry. The only answer is to construct sewers of a pipe that can safely carry virtually every known chemical. There is only one pipe you know will endure: vitrified clay pipe. Amvit Jointed Clay Pipe is strong and rigid, can't sag or bend. The plastic joint, like the pipe, is acid resistant. And, roots cannot enter this tight compression joint. Acid-laden, high temperature sewage will not bother Amvit Jointed Clay Pipe in any way. Neither will the abrasive action of sand or gravel. For more information on how Amvit can help cut sewer project costs, write or call American Vitrified Products Company, National City Bank Building, Cleveland, Ohio, or our office nearest you. We're the only company that can give you overnight delivery to any point from Missouri to Maine.

SINCE 1848

AMERICAN

AMERICAN VITRIFIED PRODUCTS COMPANY • CLEVELAND, OHIO

Plants Across the Nation:
Brazil, Indiana • Cleveland, Ohio • Crawfordsville, Indiana • Detroit, Michigan • East Liverpool, Ohio • Grand Ledge, Michigan • Lisbon, Ohio • Los Angeles, California • Milwaukee, Wisconsin • Somerville, New Jersey • South Bend, Indiana • St. Louis, Missouri • Whitehall, Illinois

Regional Offices: Cleveland, TO 1-6750 • Chicago, ST 2-5243 • Detroit, GA 1-1940 • Los Angeles, EL 9-4535 • Milwaukee, HO 6-4990 • New York, HO 5-4444 • Somerville, N. J., RA 2-3636 • St. Louis, HA 9-5400

BIG, NEW, EXTRA-TOUGH DOZERS BOOST DIRT YARDAGE

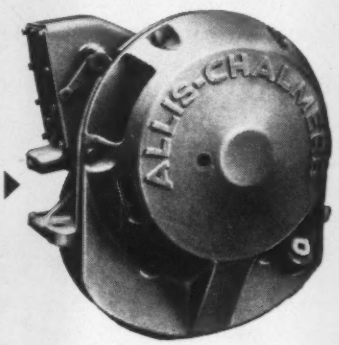
Take full advantage of Allis-Chalmers tractor power with the new line of heavier, tougher, straight, U and semi-U blade dozers and angling-type dozers. Extra-heavy-duty cutting edges and end bits, extra moldboard height give you bigger loads, extra strength throughout.

Whatever the right-of-way—trees, brush, rock, swamp, hills, gulleys—Allis-Chalmers can offer you the right tractor-dozer combination to meet the condition . . . hydraulic or cable-controlled; full U blade, wide or narrow semi-U blade; straight blade; hydraulic tilt dozer; cable- and hydraulic-type angling dozers; plus interchangeable dirt points and rock points.

Each dozer is designed to take full advantage of the power, strength and balance built into the tractor to give you big production yardage. Dozers are built for greater strength, flexibility and bigger output with higher, stronger, more rigid moldboards; bigger, heavier cutting edges and end bits; forged steel, ball-type push-beam trunnions; and extra-tough custom-rolled, special alloy steel C frames and push-beams.

New long-life, triple-valve hydraulic system for the HD-21 gives you positive control of blade lifting, lowering and tilting, and ripper lifting and lowering.

Compare Allis-Chalmers tractors with any other on major features. Inspect Allis-Chalmers tractor undercarriage; the healthy fuel-miser engine; all-steel main frame; double-reduction final drives; the industry's toughest track, and many other cost-cutting features. Then get convincing proof with a demonstration from your Allis-Chalmers dealer. *Allis-Chalmers, Construction Machinery Division, Milwaukee 1, Wisconsin.*



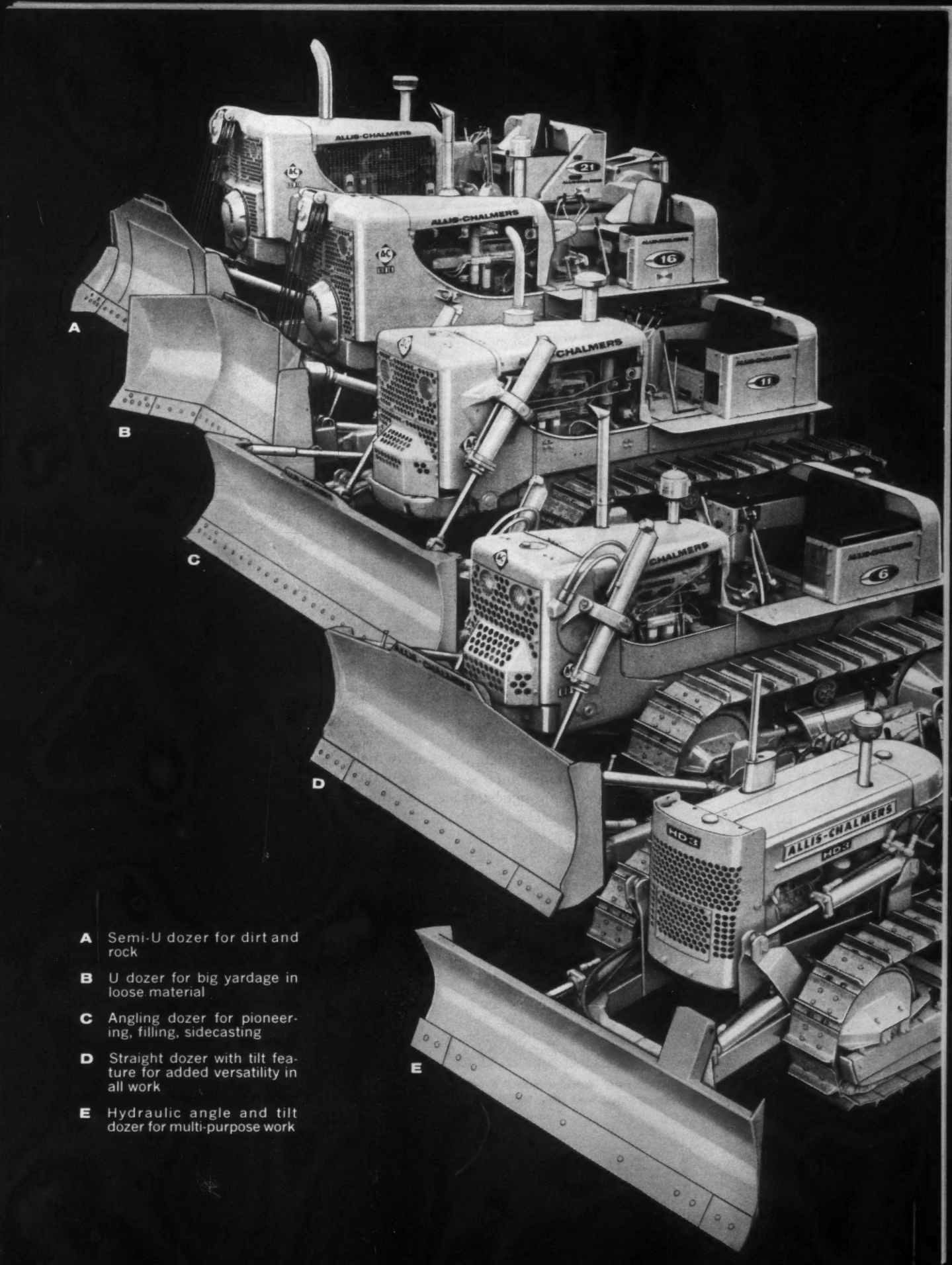
NEW F-100 FRONT-MOUNTED CABLE CONTROL UNIT ▶

New cool-running, sure-acting cable control unit is the only fully sealed, fully anti-friction bearing unit in the industry. Brake drums, bands and planetary gears run in a bath of oil. It has already recorded new standards for exceptionally long life.

STEP UP YOUR

Performance
Operator comfort
Wearability
Ease of maintenance
Reliability

WITH **ALLIS-CHALMERS**
POWER FOR A GROWING WORLD



A Semi-U dozer for dirt and rock

B U dozer for big yardage in loose material

C Angling dozer for pioneering, filling, sidecasting

D Straight dozer with tilt feature for added versatility in all work

E Hydraulic angle and tilt dozer for multi-purpose work

This mark tells you a product is made of modern, dependable Steel.

why they put a steel drain in this basin

Culvert Fabricator: Bark River Culvert & Equipment Co.
William Pink farm, Grant County, Wisconsin.

Heavy rains continually washed away valuable topsoil from this hillside and flooded the field below. So, the owner with the technical help of the U. S. Soil Conservation Service is building a dam and artificial lake here on the side of the hill. In addition to stopping the erosion and flooding, the reservoir will provide water for livestock and a good fishing hole.

When the water in the pond exceeds 14 feet, the asphalt-covered pipe, made from USS Corrugated Galvanized Steel Culvert Sheets, will carry off the overflow through the base of the dam. They used steel drainage pipe because it's durable and the price is right. They also saved time and labor costs because it's so easy to install. Conservation Engineers specify steel pipe for many projects like this.

For more information about USS Corrugated Galvanized Steel Culvert Sheets, send for our free booklet, "Culvert Sheets for Metal Drainage Products." Write U. S. Steel, Room 6290, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

United States Steel Corporation • Columbia-Geneva Steel Division • Tennessee Coal and Iron Division • United States Steel Supply Division • United States Steel Export Company

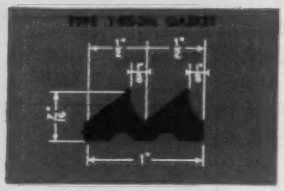
USS TRADEMARK United States Steel

TWO-WEDGE PRESS-SEAL

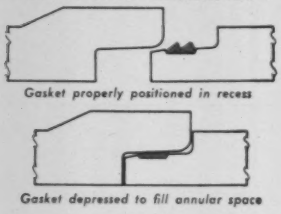
GASKET... ***makes***

TWO-WAY SEAL

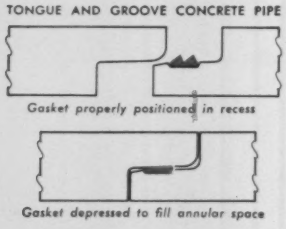
in recessed concrete sewer pipe



BELL AND SPIGOT CONCRETE PIPE



TONGUE AND GROOVE CONCRETE PIPE



Press-Seal Type 1-RS-3M molded gaskets of double wedge design provide double seal effect. Resilient rubber of precalculated volume depresses to fill annular space of recess in tongue or spigot end of concrete pipe. Confinement by recess sides assures positive, watertight seal against exfiltration or infiltration.

No roll, twist or seal breakage, even with angular deflection or sheer load.

Available in Natural and Styrene-Butadiene rubber for common sewage, Neoprene for animal fat and acid content, Buna-N for oil content.

Can be applied either at pipe manufacturer's plant or job site. Write for new informative manual No. 4.

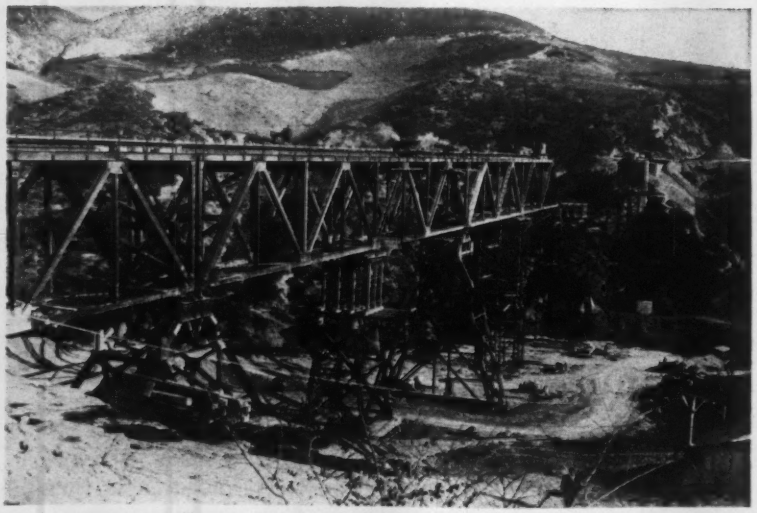
MANUFACTURED EXCLUSIVELY BY

PRESS-SEAL GASKET CORP.

OFFICE & PLANT
P.O. BOX 482
R.R. 6, COVINGTON RD.
FORT WAYNE, INDIANA
PHONE KENMORE 9213

PRESS-SEAL GASKET OF CALIFORNIA—P.O. BOX 3054, SANTA BARBARA, CALIFORNIA
PRESS-SEAL GASKET OF CANADA—KITCHENER, ONTARIO

Reader Comment



It's Been Done Before

SIR—The article on the erection of the Thomas Creek Bridge (ENR Aug. 17, p. 23) illustrates the fact that engineers will usually come up with the same solution for any given problem.

The writer used the same method in 1948 for the erection of the Brallo Bridge on the main line of the Athens-Salonika R.R. in central Greece (pictured under construction in the photo).

The only difference is that we used cranes instead of a stiffleg and our maximum height was 240 ft instead of 300 ft.

LEWIS LEVINE
Chief Structural Engineer
Ewin Engineering Corp.
Washington, D.C.

Preflex for Ultimate Load

SIR—I read with interest Mr. Zollman's comments on the methods knows as the Preflexing Technique (ENR Aug. 3, p. 8) in which he describes the use of the prestressing principle in a unique fashion.

It is true that one will obtain a stiffer structure in the so-called elastic range of behavior by creating favorable residue stresses as is accomplished by the Stage I concrete; however, one should investigate the complete behavior characteristic throughout the entire loading and unloading range when contemplating the use of a new structural form. Mr. Zollman neglected to mention that the use of the Stage I concrete to prestress the basic steel member does not in fact increase the ultimate load carrying capacity of the prestressed structure. If the applied load is increased to a sufficient level to crack the Stage I concrete, then its usefulness has been destroyed.

One should never overlook the possibility that the structure will be subjected to a severe overload; consequently one should be aware of how the structure will behave in the event of this occurrence.

On the other hand, the use of a cover plate of high-strength steel is to prestress the basic steel section (ENR May 4, p. 22) is a much sounder idea insofar as the complete ductile behavior of the structure is concerned.

PETER G. HOADLEY
Assistant Professor,
Department of
Civil Engineering
Vanderbilt University
Nashville, Tenn.

Engineering News-Record welcomes expression of opinions from its readers. Comment should be as brief as possible and pertinent to subjects of current construction importance. Letters should be addressed Editor, Engineering News-Record, 330 W. 42nd St., New York 36, N.Y.

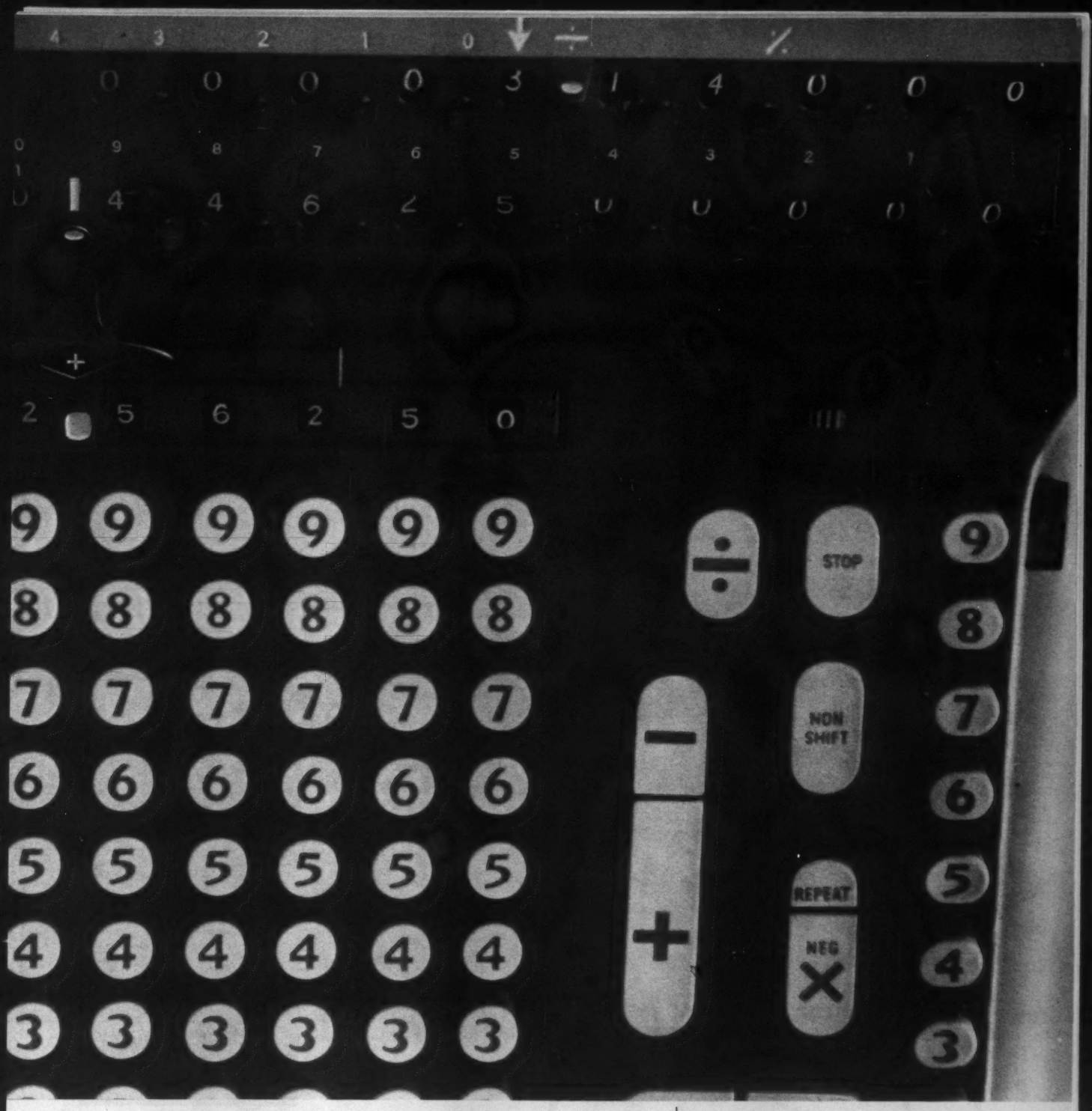
That Egyptian Temple

SIR—It seems utterly fantastic that intelligent people should agree to expend $70 million worth of energy to preserve a chunk of chiseled rock—the Abu Simbel Temples (ENR June 29, p. 22).

We're so concerned with demonstrating that we have the engineering ability to do the work that we haven't considered the economic aspects.

What a beautiful monument the $70 million would provide in the form of a central university of Africa.

PHILIP C. WAGNER
Ithaca, New York



Free! "Marchant Methods" study tailored to civil engineering. Suppose you had to calculate, in cubic yards, the volume of cut or fill between two transit stations. There's a "Marchant Methods" study to help you do the figurework on this and other problems with less work. Marchant has compiled over 200 studies, each tailored to a specific industry. For your free copy of "Marchant Methods" tailored to civil engineering—and a free copy of the Marchant booklet, "50 Checkpoints to Help Improve Your Office and Personnel Efficiency"—mail this coupon to Smith-Corona Marchant, 410 Park Ave., N.Y. 22, N.Y. Marchant—made in America.

Smith-Corona Marchant, 410 Park Ave., N. Y. 22, N. Y.
Please send me my free copy of: ☐ "Marchant Methods"
☐ "50 Checkpoints to Help Improve
Your Office and Personnel Efficiency" ENR9

NAME_____ TITLE_____

COMPANY NAME_____

ADDRESS_____

CITY_____ ZONE_____ STATE_____

SCM MARCHANT
DIVISION OF SMITH-CORONA MARCHANT INC.

SUPERIOR

The dependable source for ALL concrete forming accessories

Here are representative types of form ties, anchors, inserts, hangers, as well as several new items in Superior's most complete line of concrete accessories. Illustrated is the variety of concrete form work and related jobs in which Superior accessories are used. *All* Superior accessories are designed to provide the most dependable and efficient forming methods.

WHENEVER YOU ARE PLANNING FORM WORK . . . Superior's technical assistance is available to prepare layouts. Call nearest office shown below.

For details request CATALOG 700

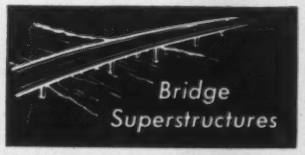
SUPERIOR CONCRETE ACCESSORIES, INC.

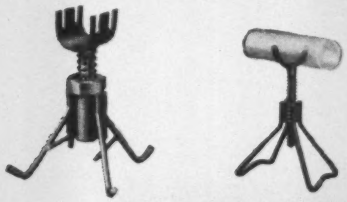
9301 King Street, Franklin Park, Illinois *(A Suburb of Chicago)*

New York Office 39-01 Main St. Flushing 54, N. Y. / *Houston Office* 4101 San Jacinto Houston 4, Texas / *Pacific Coast Plant* 2100 Williams St. San Leandro, Calif.

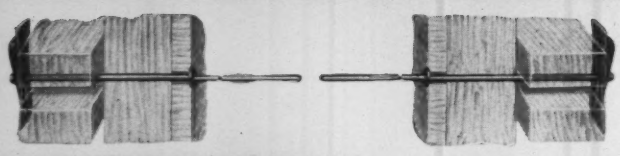
NEW

PRES-STEEL HANGERS
(Patent Pending)

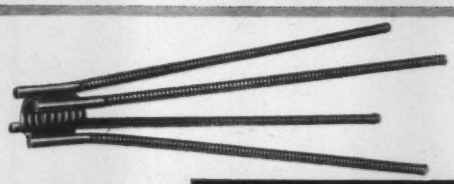




ADJUSTABLE SCREED SUPPORTS

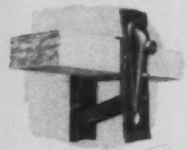


SNAP TIES



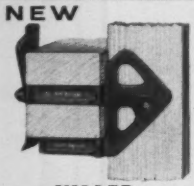
4-STRUT COIL ROD ANCHORS

NEW



SINGLE LINER TIE HOLDERS

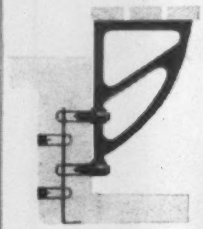
NEW



WALER BRACKET

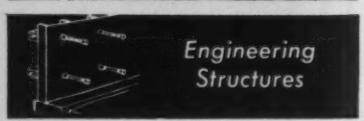
NEW

SCAFFOLD BRACKET

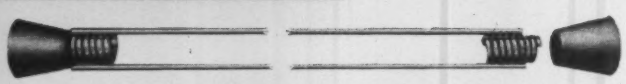


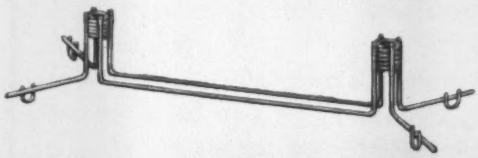
RISERFRAMES

TILT-LOCK ASSEMBLY



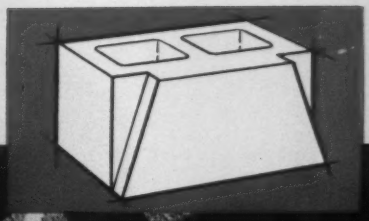
COIL TIES





PICK-UP INSERTS

Great new things are shaping up in concrete block



"Shadowal" is available from local block producers. Photo courtesy of National Concrete Masonry Association.

Atlas Masonry Cement provides the right mortar

for laying up new types of concrete masonry such as "Shadowal" block. The face of this 8 x 8 x 16 unit is recessed at an angle on each corner and is used to create a variety of geometric designs.

Whether standard units or the newer types of block are used, ATLAS MASONRY CEMENT continues to be the preferred cement for mortar. That's because it produces a smooth, workable mix... saves labor... cuts waste... helps assure a good bond... gives weathertight joints that are uniform in color. Complies with rigid ASTM and Federal Specifications. For information on masonry cement, write: Universal Atlas, Dept. M, 100 Park Avenue, New York 17, N. Y.

"USS" and "Atlas" are registered trademarks

M-84

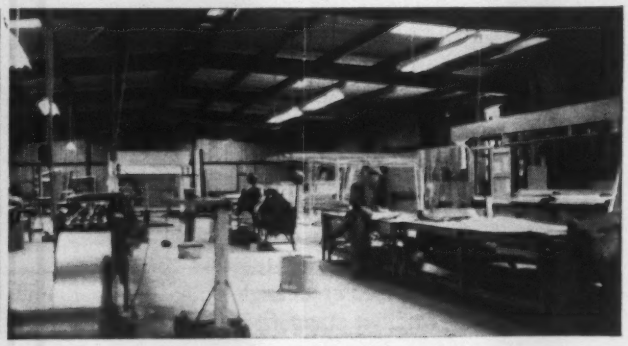
Universal Atlas Cement Division of United States Steel

OFFICES: Albany · Birmingham · Boston · Chicago · Dayton · Kansas City · Milwaukee · Minneapolis · New York · Philadelphia · Pittsburgh · St. Louis · Waco

STRAN-STEEL PUTS WORK SPACE IN A SHOWCASE

American Aluminum Company makes a product and meets its public in a single Stran-Steel building! Pre-engineered Stran-Steel gives a maximum of column-free space for fabricating operations, plus plenty of room for attractively panelled salesrooms. The building's modern low-pitched roof is a striking addition to the community, increases its customer appeal, too. And exterior panels—with a choice of 10 colorful Stran-Satin peelproof coatings—will stand up to tropical weathering for years. Easy to buy, dual purpose Stran-Steel buildings can be financed under your Stran-Steel contractor's low-cost "package deal" plan. Call him today—he's listed in the Yellow Pages under *STEEL BUILDINGS* or *BUILDINGS, STEEL.*

STRAN-STEEL
Buildings for Modern Business



American Aluminum Company of Bradenton, Florida, fabricates storm windows, doors and carports in a modern, attractive LR 60′ x 194′ Stran-Steel building, shown at top in Stran-Satin Blue.

CLIP COUPON AND MAIL TO STRAN-STEEL CORPORATION, DEPT. ENR-20, DETROIT 29, MICHIGAN

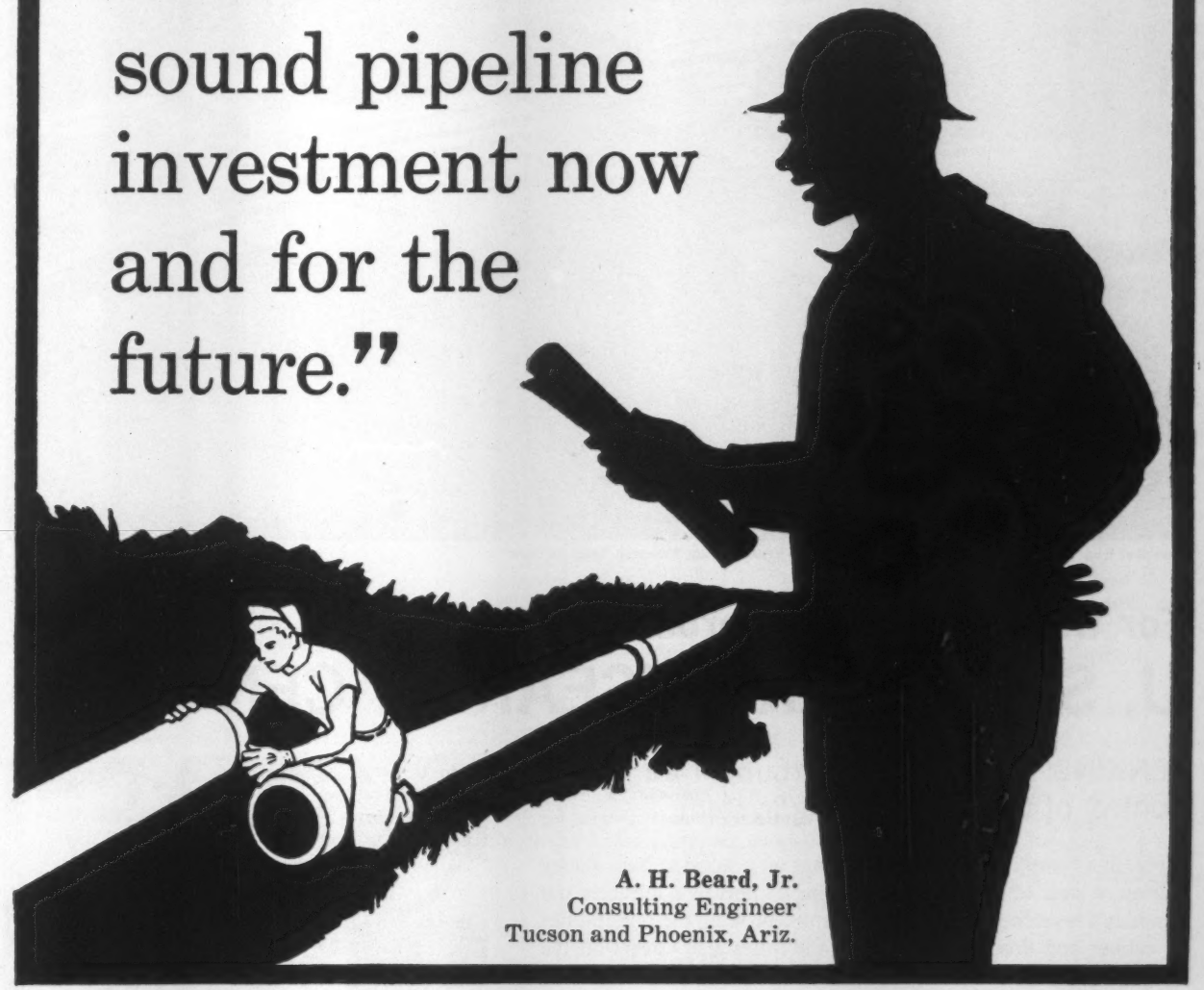
Please send complete literature on Stran-Steel Buildings in Stran-Satin Color. I'm interested in a building approximately____ ft. by____ ft. to be used for____

Name____ Title____
Company____ Phone____
Address____ County____
City____ Zone____ State____

STRAN-STEEL IS A DIVISION OF **NATIONAL STEEL CORPORATION**

An engineer from Arizona reports:

"Transite is a sound pipeline investment now and for the future."



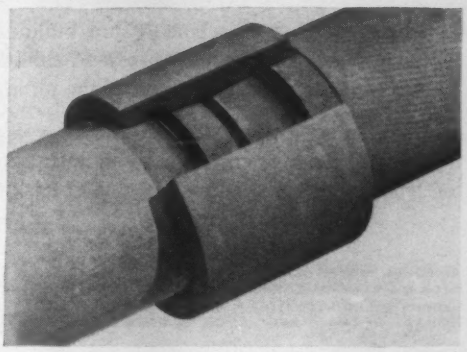
A. H. Beard, Jr.
Consulting Engineer
Tucson and Phoenix, Ariz.

"When considering a pipe material for water and sewage projects, 'value' analysis plays an important part in our choice. One of the main questions is whether the pipe will perform reliably now *and* in the future with cost advantages to the client.

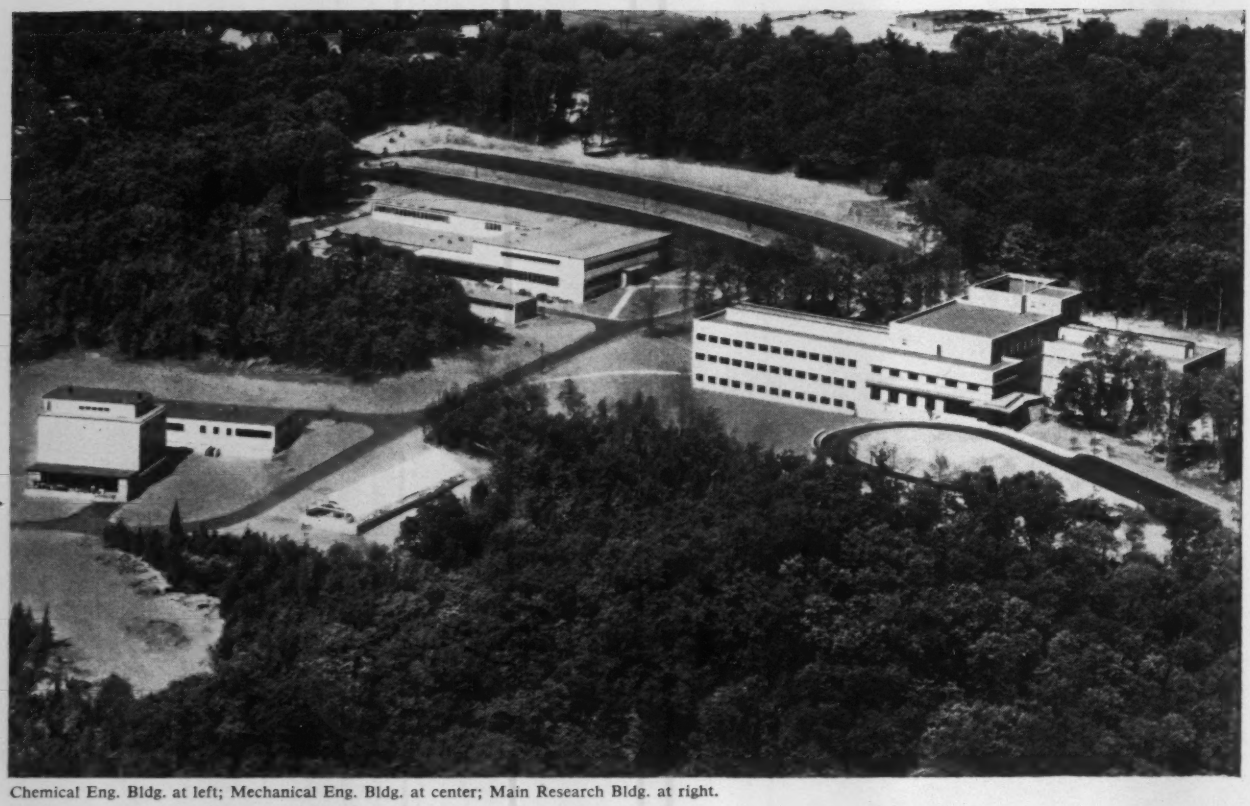
"Experience has shown that Johns-Manville Transite® Pipe offers the value we seek. It has proved reliable and at very favorable costs. In addition to savings in handling and installing, Transite's unique Ring-Tite® joints assure that leakage tests will not upset job costs. In numerous tests, Transite lines have regularly been under the 'allowable' specification.

"Installations as old as Transite itself show this pipe outstanding under flexure, crush and hydrostatic conditions. Lengths of Transite excavated here in Arizona for tests showed no signs of internal corrosion after 20 years of dependable service."

For full details, write to Johns-Manville, Box 362, EN-9, N. Y. 16, N. Y. In Canada: Port Credit, Ontario. Cable: Johnmanvil.



JOHNS-MANVILLE JM PRODUCTS



Chemical Eng. Bldg. at left; Mechanical Eng. Bldg. at center; Main Research Bldg. at right.

For this great, future-probing

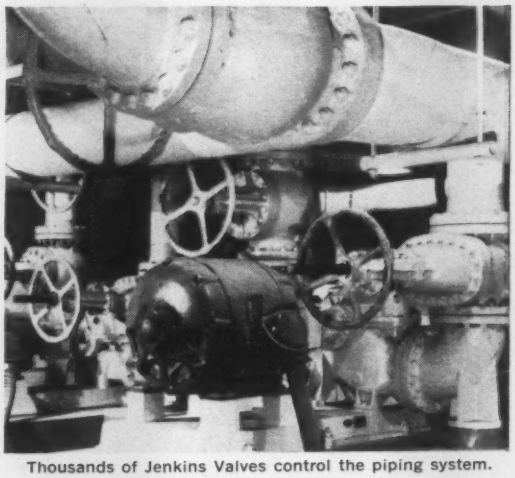
U. S. RUBBER RESEARCH CENTER

JENKINS VALVES assure trouble-free control of the entire piping system

Here, in a complex of modern buildings on a wooded New Jersey hilltop, a staff of over 400 are making tomorrow's miracles out of today's mysteries. Here, they're future-probing the possibilities in rubber and tires, of course. But the quest also covers all the other present-day interests of U. S. Rubber Co. . . . plastics, chemicals, textiles, and endless uses of such materials.

The Research Center scientists and building experts controlled the selection of equipment for their $7,000,000 "home." Jenkins Valves were widely used to control the piping systems.

Make the specification "JENKINS" *your* safeguard against valve trouble and the high cost of valve maintenance. *You pay no more* for Jenkins Valves. Jenkins Bros., 100 Park Ave., New York 17.



Thousands of Jenkins Valves control the piping system.

Architects: SHREVE, LAMB & HARMON
General Contractor: GEORGE A. FULLER COMPANY
Consulting Engineer: SYSKA & HENNESSY, INC.
Heating, Air Conditioning, Piping Contractor: FRANK A. McBRIDE

Available From Leading Distributors Everywhere

JENKINS
MOST TRUSTED TRADEMARK IN THE VALVE WORLD
VALVES
JENKINS SINCE 1864
Jenkins Bros

ENGINEERING NEWS-RECORD

Vol. 167, No. 11 September 14, 1961

Number of copies printed in this issue 87,595

CONTENTS

Congress Smiles on Construction..... 21
Glen Canyon Dam Keeps Growing..... 22
How Malan Won the Big Bonus..... 23
New NBS Center Started..... 24
Famed Architect Dies at 51..... 25
Crane Climbs to Cast 60-Story Building Core... 26
No Trains on Golden Gate Bridge..... 26

FEATURES

Slipform Rig Paves Three Lanes..... 27
Steel Drapes Guard Twin Tunnels..... 30
Aluminum Panels Wall in Cold Rooms..... 33
Developers Plan Big Use of Rail Air Rights..... 34
Welded Steel Frame Straddles Expressway.... 36

INTERNATIONAL

Czechs Treat a Roof Lightly..... 41

FIELD AND OFFICE

Copter Totes Concrete up Canyon..... 42
Aluminum Arms Top Steel Towers..... 42

NEW PRODUCTS

Electricity Powers Big Fork-Lift..... 47
Machine Forms Prestressed Planks..... 47

MEN AND JOBS 53

BUSINESS AND FINANCE

U. S. Firms Trim Foreign Outlays..... 80
Domestic Capital Outlays to Dip 3%..... 80
August Volume Tops $2.2 Billion..... 82

LABOR

Local Autonomy Plagues Union Leaders..... 87
Trial Examiner Calls Lockout Legal..... 88
Davis-Bacon Repeal Is Urged..... 89

Reader Comment ... 10
Washington Observer 19
Legal 55
Unit Prices 56
Materials Prices 59
Construction Reports. 62
Statistics, Indexes .. 77
Editorials 100

Picture Credits

Cover, 31—Colorado Fuel and Iron Co.; 22—A. E. Turner; 23—ENR; 30—Colorado Department of Highways; 33—"Pics Chicago"; 34—Chicago Tribune.

Back issues of ENGINEERING NEWS-RECORD *are generally available for the previous six months. Semiannual indexes will be sent on request.* ENGINEERING NEWS-RECORD *is also indexed in the Applied Science & Technology Index, Business Periodicals Index and the Engineering Index*

THE CONSTRUCTION WEEK

CARLA TESTS NEW SEAWALL—Three miles of new seawall extension now in the final construction stages along Galveston's Gulf side were getting a wind-and-water baptism from Hurricane Carla as ENR went to press Monday night. Corps of Engineers spokesmen say the $9.6-million, pile-supported wall, 17.6 ft above mean sea level counting a 2-ft-thick roadway on top, warded off some of the wave onslaught, but 10.3-ft tides invaded the city from the bay and flooded downtown streets to a depth of 5 ft.

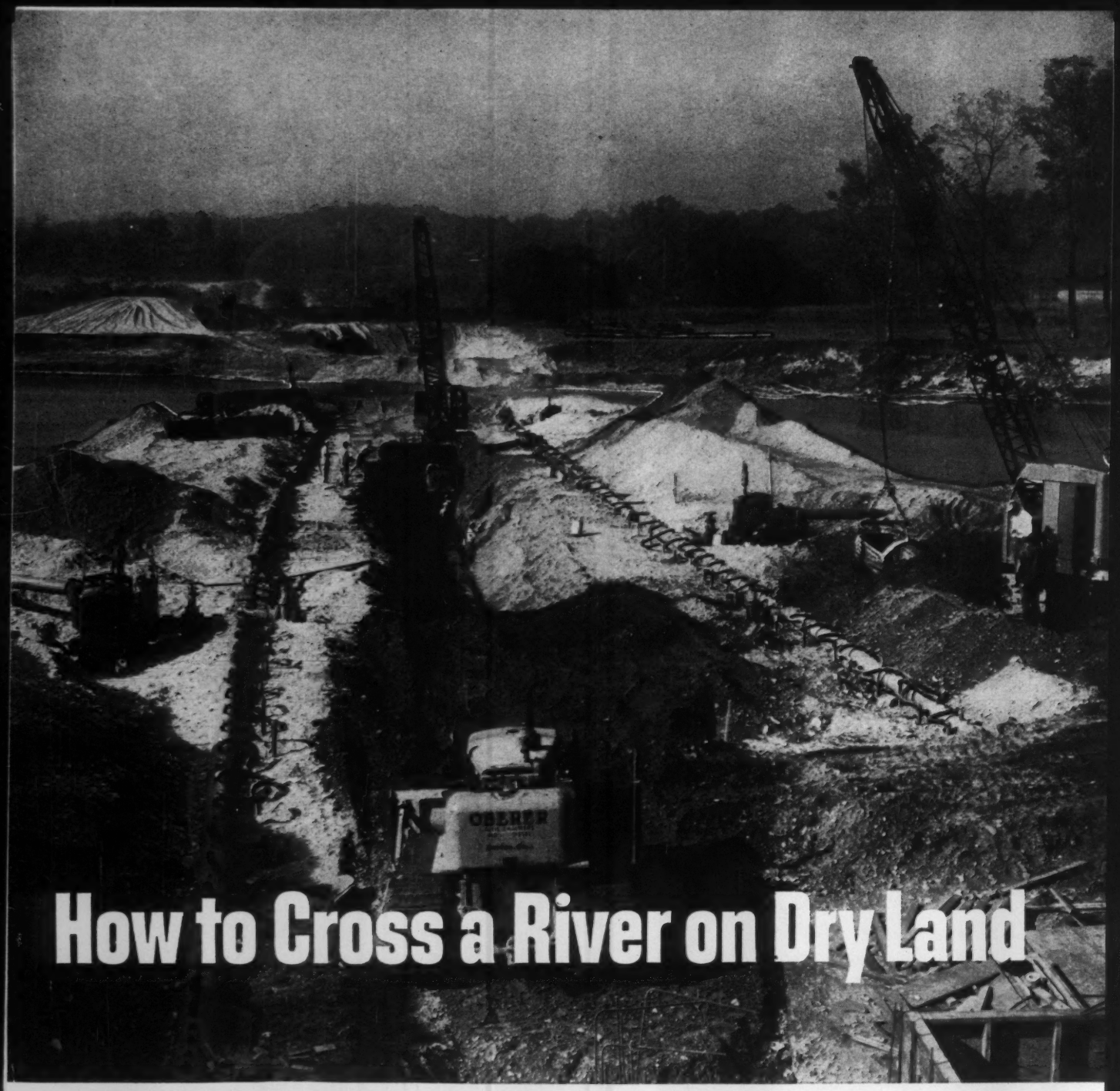
PUBLIC EYES—Federal Highway Administrator Rex Whitton has named five Regional Program Evaluation Officers to keep an eye on the federal-aid highway program. Their primary responsibility will be to investigate any known or possible irregularities in the program. Four are former FBI agents; the fifth has served the General Accounting Office.

EXTRAS AND A HALF—The builders of the Robert Moses Power Dam on the St. Lawrence River will get $23 million in extras—65% more than the original estimate on the job. The Power Authority of the State of New York last week settled the final contract on the St. Lawrence Power Project with joint venturers Perini, Walsh, Morrison-Knudsen, Kiewit and Utah. PASNY will pay the Perini-sponsored combine $59 million for the U. S. half of the dam, finished two years ago. Original estimate: $35.9 million.

BMEWS WAS A BARGAIN—The $130-million contract price of Greenland's Ballistic Missile Early Warning Station—built without the labor disputes and other delays that have plagued U. S. missile base construction—has been "redetermined" to $103 million. The saving, says the Corps of Engineers, "reflects economies effected in procurement, construction, recruiting and long-range planning."

TO THE BOTTOM OF THE BAY—Merritt-Chapman & Scott Corp., New York City, this week sank the first of 37 tunnel sections on the 17½-mile Chesapeake Bay Bridge-Tunnel project. Each steel-and-concrete tube is 34 ft ID and about 287 ft long.

MORE BOUNCE FOR MARIS—It's a heavier, firmer, livelier ball that Roger Maris is belting into the stands as he threatens Babe Ruth's 60-homer record. That's the conclusion of Joseph S. Ward, consulting engineer in Caldwell, N. J., who normally tests soils, not baseballs. Because he had tested some '52 and '53 balls for a New York sports columnist back in 1953, SPORTS ILLUSTRATED got him to test the '61 ball. The magazine's Aug. 28 issue reports: The '61 ball is heavier; compresses less under a 100-lb static load; it bounces 2% higher than the '53 ball, 10% higher than the '52.



How to Cross a River on Dry Land

GRIFFIN **Solves Another Dewatering Problem!** In just 14 days, the Oberer Construction Company of Dayton laid a 1000-foot sewer siphon — **in the dry** — under the Miami River at Hamilton, Ohio. Water flowing through the coarse sand and gravel riverbed formation was kept under perfect control by a wellpoint system designed and supervised by Griffin. George Oberer, Jr. commented, "This was the best job we ever had. Thanks to the excellent dewatering results, we saved time and excavation."

If you have a dewatering problem, call Griffin—we can save you time and money too.

RENTAL / CONTRACT / SALES **GRIFFIN**

GRIFFIN WELLPOINT CORPORATION • GENERAL OFFICE: 881 E. 141st St., New York 54, N. Y.

Branches: Hammond, Ind. • Jacksonville, Fla. • New York, N. Y. • Houston, Tex.
Redwing, Minn. • W. Palm Beach, Fla. • Norfolk, Va. • Gulfport, Miss.

WASHINGTON OBSERVER

- **Task force prescribes airport boom**
- **Saline water research gets $75 million**
- **Goldberg finds missile labor A-OK**

● **Airport construction will boom in the next decade if the Kennedy Administration and Congress approve recommendations of a Presidential task force.** The group, in its report "Project Horizon," says a 10-year total of $2.8 billion should be allocated for land acquisition, airport construction and facilities. Recommended first step: Start planning immediately for a minimum of five additional major commercial airports—in New York, Los Angeles, Chicago, Detroit and Miami. Planning should also get under way as soon as possible, the task force says, for an additional 150 smaller airports to serve business and private aviation. The group also foresees a need for downtown air transportation centers for use by short-haul helicopters.

The task force endorses the principle of federal aid for airport construction. It would give the Federal Aviation Agency greater latitude in allocating federal aid on the basis of need without undue regard to geographical distribution of money among all the states. Two other proposals: Emphasis should be put on regional airports to serve clusters of small cities, and surplus military bases should be made available for civil use wherever possible.

These proposals on airport construction stand a good chance of being accepted outright by the Administration. President Kennedy has given FAA Administrator Najeeb Halaby the job of sifting through task force recommendations, which cover a wide range of aviation matters other than airports. Mr. Halaby feels that more and better airport facilities are the greatest single step that can be taken to improve air safety and promote aviation growth.

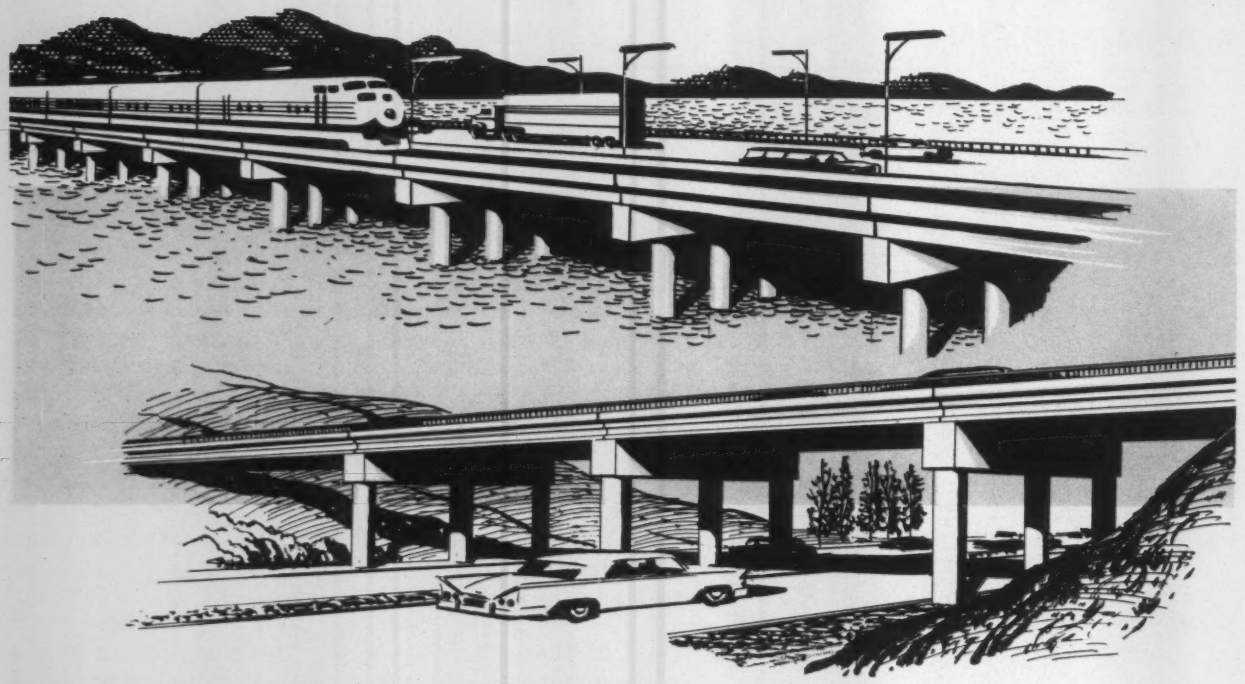
—

● **The saline water program has been compromised by Senate-House conferees at the level foreseen in this column last week.** Agreement was reached on a $75-million, six-year research program—middle ground between the Senate's $100-million, 10-year program and the House's $50-million, five-year authorization. Final congressional approval of the compromise is assured.

The bulk of the proposed demonstration program was lost in conference. House conferees forced rejection of the controversial section of the Senate bill which would have given the Office of Saline Water a virtually unlimited budget to build demonstration plants capable of producing up to 50 million gallons of fresh water per day. Some demonstration plants will be built under the research program, but each one will require approval by Congress.

—

● **Work stoppages at missile and space installations have become almost "infinitesimal."** So says Labor Secretary Arthur J. Goldberg in a report to President Kennedy on operation of the Missile Sites Labor Commission. August disputes caused a loss of only 206 man-days out of 1.5 million man-days worked at 21 missile and space sites. This was a new low for any month, and compares with last year's average monthly loss of more than 7,000 man-days. Secretary Goldberg gives the Commission most of the credit for the improvement and says its first three months of operation have been "most successful."



PRESTRESSED CONCRETE *for*

construction speed
low initial cost
freedom from maintenance or painting

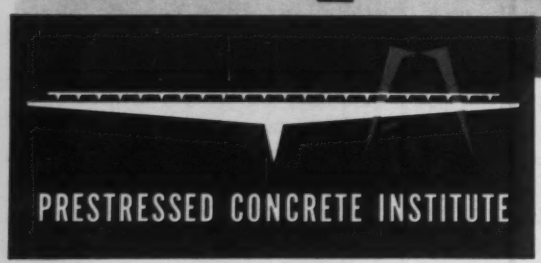
Plan to ATTEND! PCI Annual Convention Denver Oct. 15–19

To these advantages for bridges and overpasses can be added minimum traffic interference, ready availability, durability and attractive appearance.

For engineers the use of AASHO-PCI standard sections and criteria, or use of State standards, simplifies and speeds design. Contractors like the fast all-weather erection and quick delivery of plant produced prestressed concrete purchased from local PCI manufacturers. Public agencies appreciate immediate and long-range benefits in cost and service to taxpayers.

Yes, there are plenty of sound reasons why precast prestressed concrete units and pilings are used in more and more bridges and overpasses for highways and railroads.

PRESTRESSED CONCRETE *combines two basic materials to give you the best of both*



PRESTRESSED CONCRETE INSTITUTE
205 WEST WACKER DRIVE · CHICAGO 6, ILLINOIS

Gentlemen: Please send me your free report "Prestressed Concrete–Applications and Advantages." N9-14

NAME_____
POSITION_____
FIRM_____
ADDRESS_____
CITY_____ ZONE____ STATE_____

Congress Smiles on Construction

An exhausted Congress, working like a construction crew with a bonus in sight, neared adjournment this week with a burst of activity unusual for the first session of a new Congress under a new President.

President Kennedy suffered legislative setbacks, of course, in the ambitious program he submitted to the Congress last winter. But construction measures, except for schools, scored well as legislators approved a raft of bills that will mean more housing, stepped-up defense construction, more sewage treatment plants, a big increase in saline-water research, an expansion of airport construction and assurances of continued fast-paced highway construction.

Construction bills in general, helped by the Berlin crisis and Russia's resumption of nuclear tests, fared better than such other aspects of the President's program as foreign aid, medical care of the aged and tax revision.

Defeat of all school construction legislation was the most stunning setback for Mr. Kennedy. The fatal complication was the position of the Catholic hierarchy that aid to public schools without comparable help to private schools would be discriminatory. When school aid became entangled in religious controversy, many congressmen were content to let three school bills die in the House Rules Committee.

A final effort to ram through a trimmed down bill, which pleased nobody, was upset in the House 242 to 169—a margin of 73 votes—as Republicans and southern Democrats held solidly together, joined by a few northern Democrats.

All that was salvaged was a last-minute bill continuing aid to school districts flooded with children of federal employees, plus extension of loans to college students under the National Defense Education Act.

It may well be that federal aid for school construction is dead for some time to come. President Kennedy's assertion that he will try again next year may be hollow; House Democratic leaders have already acknowledged that chances will be no better next year. Proponents of aid are too divided over what they want.

While the President's extensive program in other construction areas was trimmed considerably, many of his proposals succeeded.

What Congress Did and Didn't Do . . .

The legislation—	What happened to it
Housing	Passed biggest omnibus bill yet; more liberal FHA terms, public housing, urban renewal rehabilitation, housing for elderly, college dormitories.
Highway finance	Passed to continue gas tax, raise truck taxes to provide $9 billion in additional revenue.
Military construction	Pending, but $947.9-million compromise is likely to be the appropriation.
Public works	Pending, but expected to exceed the $3.6 billion recommended by House Appropriations Committee.
Foreign aid	Pending, but expected to exceed the $3.7 billion passed by House. Includes long-term loan commitment authority.
Depressed areas	$450-million federal loan-grant program passed to help attract new industry.
Water pollution	Annual grants for sewage plant construction doubled to $100 million over next three years.
Airport aid	Passed $75 million annually for five years in matching grants.
Saline water	Greatly expanded program passed $75 million a year for six years for research and construction.
Schools	Simple extension of aid to impacted areas and National Defense Education Act. No other funds for construction.
Minimum wage	Raised minimum to $1.25 in two stages, extending coverage to 3.6 million workers, including 1 million in construction.
Urban affairs	Bill to create Cabinet department put over until next year.
Situs picketing	Put over until next year.
Hospitals	Pending, but expected to be about $200 million under Hill-Burton for construction aid.
Tax revision	Put over until next year when Administration withdrew tax-credit proposal.
Delaware River Compact	Pending, but chances vastly improved for approval of interstate-federal commission.

Right off the bat, Mr. Kennedy won a political victory in getting more liberal members appointed to the House Rules Committee. This committee, which clears legislation for debate and vote by the House, had been dominated for years by the GOP-southern Democrat coalition. Last year, for instance, the Rules Committee buried bills for school construction, urban renewal, housing for the elderly, community facilities and college housing.

The coalition proved relatively ineffective this year as Congress acted on housing, minimum wage, depressed areas, highways and lesser measures.

Not until the foreign aid proposal and school construction came along in August did the conservative coalition regain its strength. The President's proposal to finance aid by borrowing from the Treasury was too much for the tenuous majority in the House. Mr. Kennedy ended up with a bill which allows the new foreign aid agency to make five-year commitments to underdeveloped countries but requires annual appropriations from Congress.

Regardless of the political controversy, the five-year commitment authority granted the President in the foreign aid bill will be a major help

to contractors in planning big projects overseas. Though Congress retains the right to appropriate funds on a year-to-year basis, it is hardly likely to renege on a White House commitment.

In addition, U.S. companies doing business overseas will get a certain amount of "insurance" against commercial as well as political risks. The new foreign aid program makes slight changes in previous guarantees.

For political risks on foreign investments, a company can count on claims up to $1 billion. Coverage was extended to such causes as revolution, war, inconvertibility of currency and expropriation.

Commercial risk insurance includes coverage for normal business losses, except malpractice on the company's part. But each commercial risk gurantee is limited to $10 million. Only wholly-owned U.S. subsidiaries or companies owned 100% by U.S. citizens are covered in the new insurance.

A very late public works appropriation bill for fiscal 1962—already more than two months gone—finally began to take shape. The House Appropriations Committee has recommended a $3.66-billion measure.

Reason for the delay was the battle over authorizing electric power generators at the Hanford (Wash.) nuclear reactor. Since $95 million was included for Hanford in the Kennedy Administration's budget request for 1962, Appropriations Committee Chairman Clarence Cannon (D., Mo.) held up action on the entire money bill until he was fairly sure how the Hanford authorization would come out.

Even so, more than $200 million in construction funds for the Atomic Energy Commission – including possibly Hanford—have been left out of the appropriations bill because of the delay by the House in voting on a compromise Senate-House authorization bill for Hanford. Most of this money will be re-instated by the time the money bill gets to the Senate.

The House committee's version of the appropriation bill is smaller than the 1961 money measure, and it's smaller still than the budget requested for fiscal 1962 by President Kennedy.

Construction funds for the major agencies: Corps of Engineers, $680.9 million; Bureau of Reclamation, $153.3 million; Upper Colorado project (additional USBR funds), $55.5 million; Bonneville Power Administration, $20.9 million; Southwestern Power Administration, $950,000. The bill also includes an appopriation of $38.2 million for the Tennessee Valley Authority—not a true picture of TVA's construction plans, because of its independent bond financing authority.

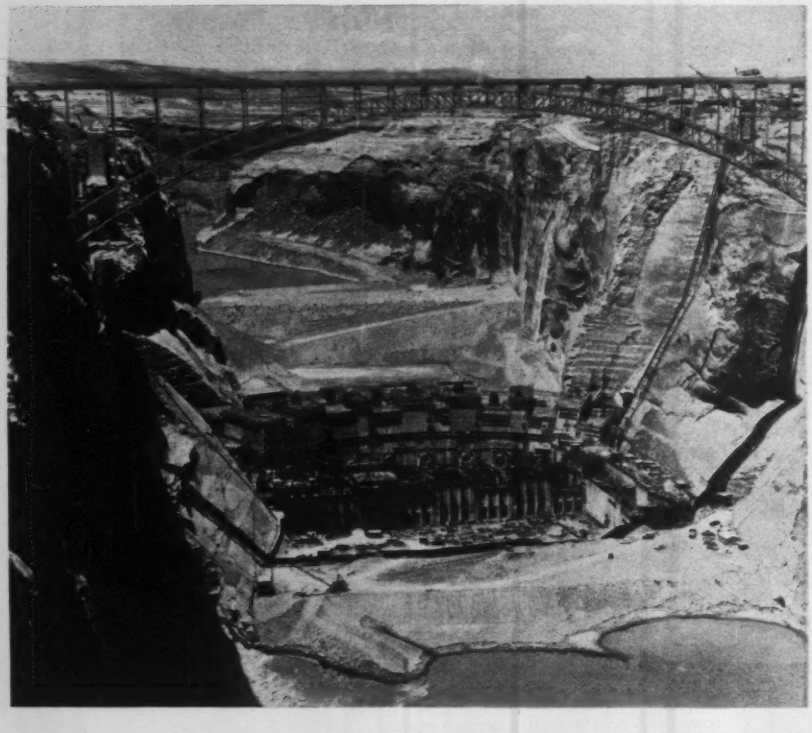
The committee bill recommends 64 new construction starts: 58 for the Corps, six for the USBR. In reaching this figure, the committee dropped one new Corps start recommended in the Kennedy budget—a ship channel from Port Aransas-Corpus Christi to Viola, Tex.—and added nine new ones. The figure of six Bureau new starts was unchanged.

Largest chunk of money for a single project would go for Oahe Reservoir on the Missouri River in South Dakota, $40 million; second place goes to John Day Dam on the Columbia River, $31 million. Other large construction projects: Eufaula Dam, Okla., $28 million; Keystone Dam, Okla., $27.5 million; Mississippi River channels, $23 million; Barkley Dam, Ky.-Tenn., $22 million. All these are Corps of Engineer projects. Largest USBR project would be $55.1 million for over-all work on its Central Valley project in California. The Bureau also would receive $19.9 million to continue work at Glen Canyon Dam on the Colorado River (picture, left).

Pumped storage power facilities will be studied by the Bureau of Reclamation, under orders of the House committee. A $150,000 piece of the Bureau's $6.5-million fund for general investigations was set aside for use solely on initial and reconnaissance studies of potential pumped storage sites in the 17 western, reclamation states.

One of Mr. Kennedy's smashing legislative successes was the housing program, estimated to cost anywhere from $5 billion to $9 billion over the next four years.

The legislation achieved major breakthroughs in the extent of the already extensive federal aids to the homebuilders—new insurance programs for single family housing, new direct loans for housing for the elderly, new insurance for urban renewal construction, another big pool of loans for college housing, an authorization for 100,000 public housing units, and more.



Glen Canyon Dam Keeps Growing

Still dwarfed by the canyon it will grow to plug, Glen Canyon Dam, reached a height of more than 270 ft with its highest monolith last week. A million-and-a-half yards of concrete are in place.

The harmonica-like structure at the base of the arch (see photo) is formed by the twenty-four 12 x 16.5-ft openings of the tailrace portals for the 900,000-kw powerhouse. The dark cylinders protruding from the monoliths are the 15-ft-dia penstocks. Penstock intakes will be some 460 ft above the foundations in the face of the dam.

Glen Canyon will be the second highest dam in the U.S. at 710 ft above bedrock, but it's the highest arch dam ever built in this country. Volume of concrete in the dam proper will be just under 5 million cu yd.

Merritt-Chapman & Scott Corp., New York, is building the dam under a $108-million contract with the Bureau of Reclamation. Completion is set for spring of 1964.

Fast work on O'Hare terminal buildings earned the builder a bonus of over $300,000.

The project was finished in 11 months—52 days ahead of schedule. Malan's Frank Phillips tells . . .

How Malan Won the Big Bonus

Coordinated effort, careful job planning and perseverance in expediting the work won Malan Construction Corp., of New York City, the $338,000 bonus it got for finishing twin terminal buildings at Chicago's O'Hare International Airport 52 days ahead of schedule.

At least, that's how the company's success is summed up by Frank Phillips, district manager in charge of the work for Malan.

Finishing its $18.3-million contract in 11 months, his company won what's believed to be the biggest construction bonus ever paid by Chicago.

The buildings are sizable: Each is 760 x 135 ft, with two main floors, a penthouse and a basement.

Malan knocked 52 days off the allotted construction time despite bad weather, without unusual mechanization and with no special bonus incentives to subcontractors or their employees. There was some overtime to meet exigencies, but not around-the-clock operations. The contractor was favored by availability of an adequate labor force, and the men were reasonably productive. Peak manpower reached 1,100.

Basically, the success of the project can be attributed to this: Malan set a tight schedule and made the subcontractors meet it.

To do this, the general contractor provided more than the usual amount of supervision over the 45 prime subcontractors and 300 material suppliers. He had three construction superintendents, and each of them had two assistants. Thus, there were nine superintendents for the two big buildings.

Another key tactic was systematic scheduling of construction operations in advance. In general, production schedules for all subcontractors were set up at least a month ahead, and the superintendents and other expediters saw to it that the goals were met.

Malan kept a tight rein on over-all progress. Management insured that each subcontractor dovetailed his operations into the over-all plan and kept his part of the job on schedule, to keep from delaying any of the other trades.

Completion of the buildings ahead of schedule permits earlier installation of operational equipment by the airlines, while Malan adds finishing touches.

Target date for initial passenger operation is Jan. 1, 1962. In the meantime two-story, finger-type, connecting concourses and paved parking areas for passenger planes are being completed by other general contractors. Access roads and paved parking areas for automobiles are also being rushed to completion to beat the winter weather.

Naess & Murphy, architects and engineers for the entire expansion and modernization program at O'Hare, designed the terminal buildings in accordance with advanced concepts of functional efficiency and architectural beauty.

Both buildings will be served by two-

level, one-way roadways. Outbound passengers will arrive at the second floor level, on an elevated roadway. They will move past the ticket counters, along the concourses and over loading bridges to their planes, without leaving the second floor level.

Incoming passengers will enter the terminal buildings from the ground floor of the concourses, claim their baggage at that level and leave by ground transportation on the lower level of the two-level roadway.

Six moving electric stairs in each building connect the first and second floors.

Airline ticket counters extend almost the full length of the second floor. The same design is used throughout, except that each airline has its own distinctive color.

The second floor, which provides the waiting areas in each building, also will contain offices, and general concessions. The first floor will be devoted to baggage handling and other services required by incoming passengers. Various offices are located on the mezzanine floor, while mechanical equipment is housed in the penthouse and in the basement.

The second floor is enclosed with ½-in.-thick glass supported by 12-in. structural aluminum mullions. The large-panel glass absorbs glare and heat, and reduces jet and other outside noises. It also keeps interior glare to a minimum. A radiant acoustical metal pan ceiling will diffuse light and reduce airport noises reflected from the terrazzo floors, as well as performing its function of heating and cooling.

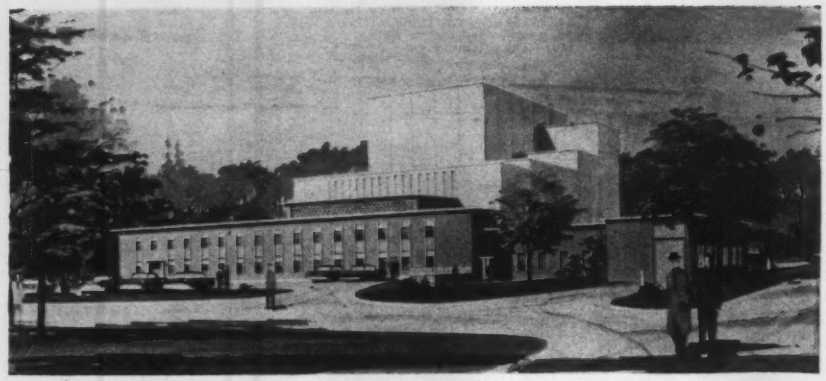
Both terminal buildings will be heated in winter and air-conditioned in summer by hot or cold water from a nearby heating and refrigeration plant. This 320 x 85 ft by 40-ft-high plant, being constructed by Malan under a $4.4-million contract is scheduled to go into operation in November.

The two terminal buildings will connect at both the first and second levels with a $4.5-million circular restaurant located between them. The 200-ft-dia building will be covered with a cable-suspended dished roof.

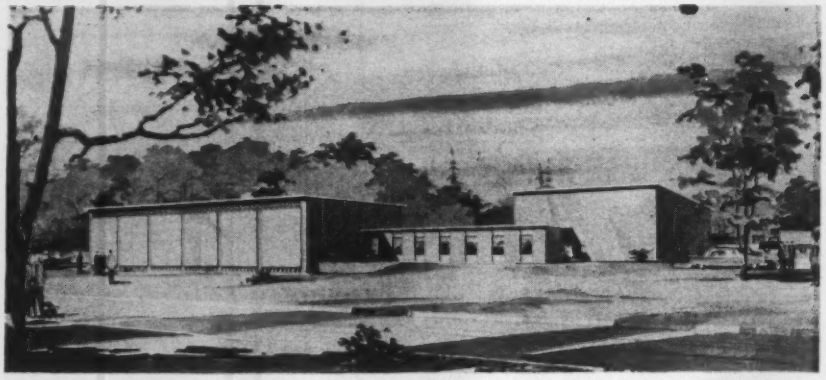
Each terminal building connects with two two-story loading fingers that serve the parking areas for loading and unloading passenger planes.

Malan Construction Corp.'s three other major contracts at O'Hare include a $6.8-million American Airlines hangar, a $3.8-million Eastern Airlines hangar, and a $1.5-million tank farm for storing aircraft fuels.

Major construction under way by other contractors include $5 million worth of automobile parking lot paving and $6.3 million worth of aircraft parking areas around the concourses and terminal buildings.



Multilevel roof symbolizes multipurpose mechanics laboratory.



Boiler plant will serve the campus-type research center.

New NBS Center Started

First stage construction has begun on the $104-million laboratory complex for the National Bureau of Standards (NBS) in Gaithersburg, Md., 22 miles northwest of Washington, D. C. The site covers 555 acres.

Beyond the $7.7-million initial construction now under way, there promises to be work for builders under the present program for at least the next four years. Second phase construction should be ready for bidding in October or November.

Construction will vary from ordinary lab and utility buildings to special-purpose structures of new and experimental design. For instance, a number of completely wood structures will be built in a special non-magnetic area for research in the Electricity Division. And plans call for eventually building four "time of flight tubes" on the new NBS grounds. These tubes, from 330 to 2,625 ft long, will be used for radiation physics research.

NBS has needed new facilities for years. Formal planning of the Montgomery plant began in 1956 when Congress appropriated money to purchase the new site. Now 60 years old, NBS has over 3,000 persons crammed into 114 different buildings in Washington, D. C. In addition to providing sorely needed space, the Gaithersburg labs will let NBS provide service to science and industry in an increasingly wide and complex variety of operations.

• **Planning for diversity**—The architects, Voorhees, Walker, Smith, Smith & Haines, New York City, began with a comparison study of single vs. multiple-building plans. NBS work is so varied—and also so complex—that the multiple-building plan was chosen for efficient operations.

There will be 18 separate buildings divided into three major groups in the present plan. Additional buildings for the center, not yet designed, will include a research reactor, an acoustics lab building of 5,000 to 10,000 sq ft, a high pressure lab and a fluid dynamics lab. The present plan includes only the three groups of buildings slated for construction over the next four years or so.

One group of buildings, near the grounds' main entrance will include an administration building and seven general purpose laboratories. All are independent but connected by enclosed passageways. The administration building will have an 11-story office tower

and four wings for classrooms, combined cafeteria and medical departments, a large auditorium and a library. The seven lab buildings close by will all be three stories high.

A second group near the center of the grounds will all be service or special-purpose buildings. The boiler and refrigeration plant is here, plus a motor pool and maintenance building and supply warehouse. The last two buildings are special-purpose laboratories. One of these is the engineering mechanics lab. The other is a complex structure, more than half below ground, designed for the Radiation Physics Division.

The third group of labs is purposely isolated at one end of the grounds. One building here is for fire research and flammability testing. Next to it is a concrete testing lab. In addition, there will be storage yards, a magazine and an underground vault. Off to one side is the special non-magnetic area with its all-wood structures.

First stage construction, now started, will include partial site development, utility installation, powerhouse construction and erection of the engineering mechanics laboratory.

• **Boiler plant**—The boiler plant will supply steam, compressed air and chilled water for the entire system of buildings. It is an L-shaped, steel-framed building with two high-bay areas. One houses the boilers, the other the refrigeration equipment. They are linked by a central control area with monitoring rooms, offices and utility rooms. Plant capacity has been designed to serve the entire lab complex as now planned, though the high bays can be extended to house more equipment. But distribution lines going in now are designed to cope with any foreseeable load increases.

The refrigeration plant will be one of the largest of its kind in use for non-industrial work. Four 3,000-ton capacity centrifugal refrigeration machines will generate all the chilled water needed for both air conditioning and technical process equipment throughout the grounds.

Steam for the entire complex will come from four package water tube, oil-fired boilers. Each will produce 44,000 lb per hour at 150 psi. In case of a power failure, half the boiler plant can be operated without electric power drive by steam turbine power driven auxiliaries.

Two vertical, non-lubricated compressors in the boiler wing will supply oil-free, clean, dry compressed air to the distribution system at 110 psi at a rated 770 cfm. Because of the need for uniformity at NBS, 42F chilled water will hold the compressed air dew point at 50F throughout the year.

The steel-framed plant is windowless except for one side of the connecting control area between the two wings. The boiler bay is 24 ft high, the refrigeration bay 28 ft high. Roofs are metal decked over the whole plant. Floors are all quarry tile. Exterior walls are brick.

• **Mechanics lab**—The first lab building—the mechanics laboratory, pictured at left—could easily have been half a dozen structures. There are seven different roof levels ranging from about 18 to 97 ft high, an indication of the variety of equipment and functions that NBS has specified for the building. The reason for the common structure is to have offices and other common-use space readily accessible to all personnel in the various testing areas. There's a 24-ft-high, two-story office section along one side of the building; all test labs are ranged behind it in blocks of various heights.

Heavy, massive testing equipment dictated the building's design. There will be five dead-weight machines from 10,000- to 1-million-lb capacity, a vertical testing machine capable of 12 million lb in compression and 6 million lb in tension and a horizontal Emery testing machine with 2.3-million-lb and 1.5-million-lb limits in compression and tension.

The vertical testing machine alone will need 80 ft of head room in a 75 x 169-ft enclosure.

And large size isn't the only design requirement. Isolation and close temperature control are vital for correct operation of these sensitive testing machines.

Except for the 10,000-lb capacity machine, each dead-weight machine area requires three separate floor levels. A weight room at the bottom, force measuring room above and a jack room at the top make up each stack. And each of the three rooms has to be entirely enclosed by insulated concrete floors, walls and ceilings. Each force measuring area has its own separate, high precision, automatic air-conditioning system. NBS scientists will be able to calibrate temperature coefficients for the various machines to plus or minus 0.5F over a range from 50F to 100F.

Like the boiler plant, this first lab building will be steel framed with concrete floors, metal deck roofs and a brick exterior. Both are scheduled for completion in 1963.

Construction schedules for the additional buildings will depend on appropriations voted by Congress.

Architect Frank J. Waehler is project manager on the NBS labs for Voorhees, Walker, Smith, Smith & Haines. Paul Tishman Co., Inc., New York City, is the general contractor for the first stage of the project.

Famed Architect Dies at 51

Architect Eero Saarinen, famed for his unusual designs of double-curved, thin-shell concrete structures, died September 1 at the age of 51.

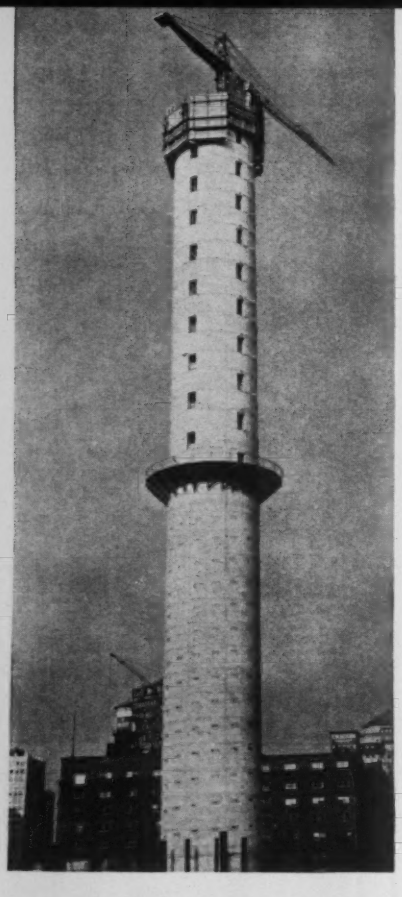
His firm, Eero Saarinen and Associates, of Birmingham, Mich., designed the General Motors Technical Center, the TWA terminal building at New York International Airport, the U.S. embassies in London and Oslo, and the terminal building under construction at Washington's Dulles International Airport.

Mr. Saarinen was born in Finland. His father, Eliel Saarinen, also was a noted architect. The family moved to the U.S. in 1923. Eero graduated from the Yale School of Architecture in 1934 and after traveling through Europe for two years on a scholarship joined his father's firm.

In 1939, the Saarinens won a $7,500 prize in a competition for the design of the proposed Smithsonian Art Gallery, which has not been built. In 1948, they won a competition for design of the Jefferson National Expansion Memorial in St. Louis. Now under construction, this memorial will be a stainless steel arch symbolizing the gateway to the West.

Eero Saarinen took over the firm following his father's death in 1950. In addition to the much-publicized structures previously mentioned, he also designed the hockey rink and Morse and Stiles colleges (now under construction) at Yale and the domed auditorium and cylindrical brick chapel at Massachusetts Institute of Technology.

Eero Saarinen
Noted for bold designs.



Crane Climbs to Cast 60-Story Building Core

Pulling itself up by its bootstraps, a fully-revolving climbing crane sets the forms, reinforcing steel and concrete for the service core of one of the twin 60-story apartment buildings in Chicago's Marina City.

Two 32-ft-dia cores, each containing five elevators and a stairwell, will form the central support for the 128-ft-dia apartment towers. Each structure is supported on 40 drilled concrete caissons extending 115 ft to bedrock (ENR May 25, p. 32).

The first four floors will contain shops and service facilities. The next 16 floors will be circular ramps for parking, and the upper 40 stories will contain apartments.

The reinforced concrete service cores are formed inside plastic forms, reinforced with timber wales and strongbacks. Construction crews average four stories (34 ft) of concrete core per week. By Labor Day, the east core reached the 40th floor. As the core increases in height, the climbing crane is jacked from floor to floor in 8½-ft lifts.

Contractors for the $36-million project, which also includes an office building, theater and a 700-boat marina (ENR Mar. 10, 1960, p. 23) are the James McHugh Construction Co. and Brighton Construction Co., joint venturers. Bertrand Goldberg Associates is the architect.

No Trains on Golden Gate Bridge

Directors of the Golden Gate Bridge and Highway District last week voted nine to four to accept an engineering report by Clifford E. Paine, which declares the Golden Gate Bridge incapable of safely supporting rapid transit trains.

This action by the bridge directors was quickly followed by an emergency meeting of the officials of the Bay Area Rapid Transit District (BARTD) who voted to eliminate Marin County from the regional transit plans, and to try to get a four-county program before the voters by next June. All previous planning had been based on a five-county transit system (ENR Aug. 10, p. 21.)

Elimination of Marin County will cut about $150 million from the cost of the system, some of which will be offset, however, by the cost of necessary route changes within San Francisco.

BARTD officials are far from satisfied with the ruling on the Golden Gate Bridge. At their meeting they urged the Supervisors of Marin and San Francisco counties to join them in sponsoring an impartial engineering board of review, to decide between the Paine report and the report by Carl H. Gronquist, which was favorable to transit on the bridge (ENR Aug. 31, p. 21). BARTD officials asked the two counties to share cost of the study, but offered to foot the entire bill if necessary.

If an impartial engineering study is favorable to putting transit on the bridge, BARTD officials would petition the bridge directors to reverse their decision of this week.

Adrien Falk, BARTD president, charged that the decision of the bridge directors was based on emotion rather than reason. "If differences of opinion existing between engineers in the 1930s had been treated in this manner, there would never have been a Golden Gate Bridge," he said.

A BARTD spokesman said that any engineering changes in transit plans would be made with the possibility in mind that Marin can be worked back into the system in the future.

Around the World . . .

• **Reactor for Rio**—The Brazilian government plans to build a 300,000-kw nuclear power station to supply Rio de Janiero and vicinity. A part-government, part-private company has been formed to take bids for construction of a gas-cooled reactor unit, which will use natural uranium as fuel and graphite as a moderator.

• **Way out**—The Arizona Highway Department has made a record-setting electronic distance measurement. Using a Tellurometer, engineers measured a line 139 miles long to an accuracy of 1:60,000.

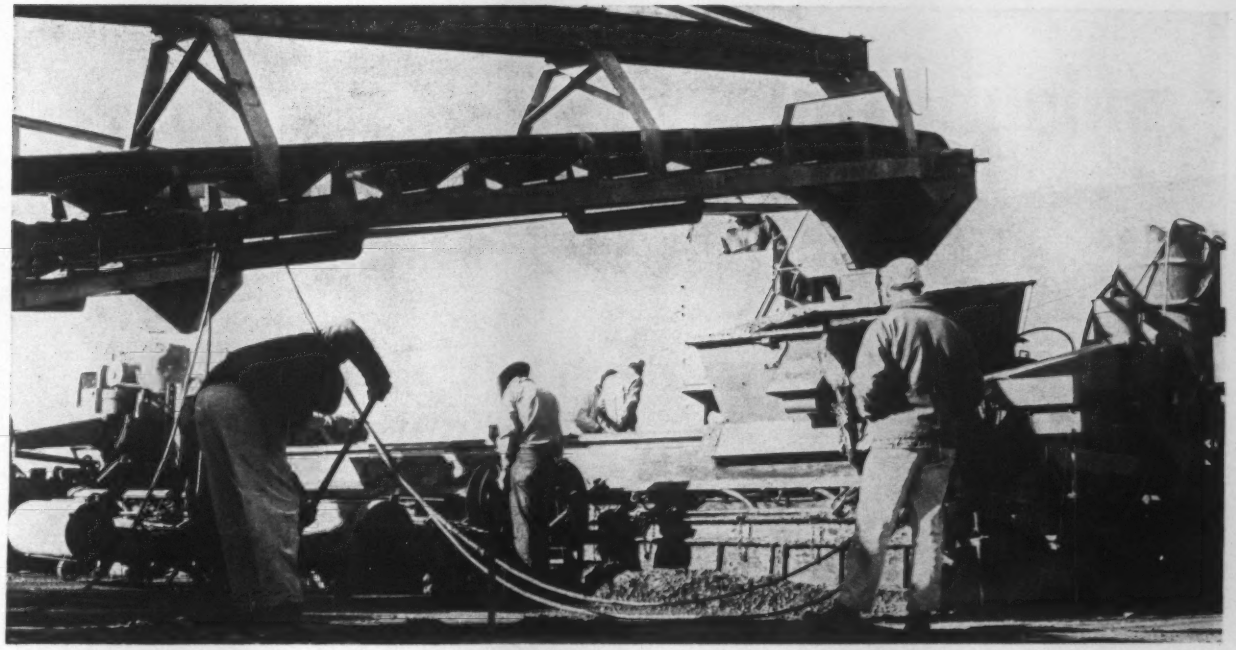
• **$80-million court decision**—New Castle County, Del., gained an $80-million refinery when the County Levy Court last week rezoned 2,672 acres to heavy manufacturing after a hot battle. Shell Oil will build the refinery along the Delaware north of the Smyrna River. Shell plans to buy 2,000 more acres in the area.

• **What county officials want**—The National Association of County Officials went on record at their annual meeting in Chicago as opposed to a new Cabinet-level U. S. Department of Urban Affairs. They want federal aid to municipalities channeled through state agencies.

• **Anti-evaporation research**—Under the Bureau of Reclamation's research program on evaporation-retarding monomolecular chemical films on reservoir surfaces the University of Nevada's Desert Research Laboratory will study the effects of monolayers of a variety of chemicals that develop under natural and simulated solar radiation and varied atmospheric conditions.

• **Better transient housing**—New York State has begun development of a model code covering housing for migratory farm workers and other transient accommodations. First step in a two-year study is a field survey of existing conditions. The state now has a model housing code that covers permanent residences, mobile homes and mobile home courts.

• **Nuclear state**—Sierra Pacific Power Co., which serves northern Nevada, plans to build a 75-mw nuclear power plant that will be located near Reno sometime in the late Sixties. Because conventional fuels are expensive in this part of the state, Nevada may become a laboratory for the development of atomic energy incentives encouraging the commercial production of nuclear energy.



Conveyor belt dumps concrete into hopper that moves back and forth at front of slipform paver.

Slipform Rig Paves Three Lanes

A California contractor has modified an existing 24-ft slipform paver to produce a 36-ft-wide concrete surface in one pass.

Gordon H. Ball, Inc. of Danville, Calif., is using it to convert a 4-lane expressway near Fairfield into a 6-lane freeway that will be part of U. S. 40 (Interstate 80).

Only one 10,000-ft stretch requires paving a full 36-ft width of new surface in the 4½-mile job. This is hardly enough to justify development of a new machine. But the contractor expects to use the 36-ft-wide slipform paver on a 5-mile freeway job just south of Sacramento where there are many 3-lane pavement sections. California plans to build many more miles of 6-lane concrete highways.

The machine is a Guntert & Zimmerman paver that Ball has used since it was first introduced.

Guidance for the machine centers on limit switch devices operating on precisely set piano wires. These wires control horizontal and vertical alignment.

Concrete mixers with elevating conveyor belts place concrete in a hopper on the paving machine. The hopper travels across a trough spreading the concrete evenly across the pavement width.

Instead of depending on trough pressure to consolidate the concrete, the machine uses a series of internal vibrators. The rear end of the trough acts as a screed.

A rotating tube mounted near the rear edge of the machine provides additional concrete density. The tube turns in the opposite direction to the machine's travel. A pan at the rear of the machine completes the automatic surfacing.

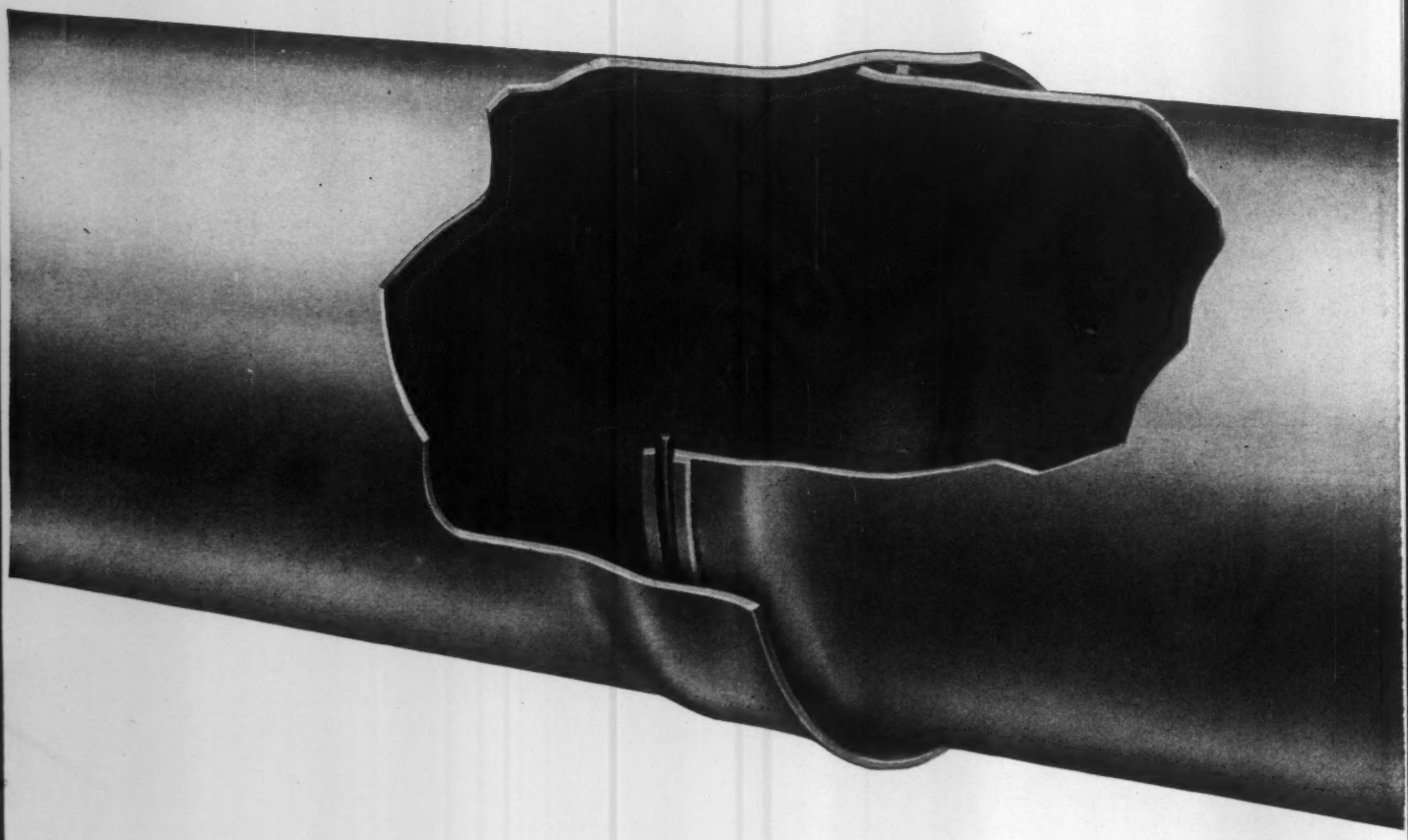
The original version of the machine had a set of trailing forms that hauled a V-shaped float and a burlap drag. The trailing forms have been removed, because the vibrators and screeds now give the concrete enough density in the 15-ft length of the machine. Slightly more hand finishing is now needed than previously.

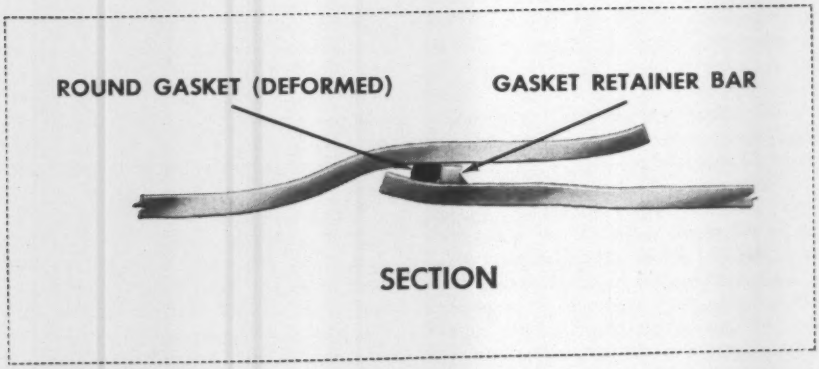
In the first version of the Guntert & Zimmerman slipform paver, a drum just ahead of the trough fed tie bars for longitudinal joints into the pavement. This is still used except that two drums are needed to produce the two longitudinal joints needed in 36-ft-wide pavement.

The machine cuts its own longitudinal dummy joints by vibrating plates. Ball has added a device that has the vibrating plates insert continuous thin strips of polyethylene plastic into the pavement. The result is that no longitudinal joint sawing is needed.

Resident engineer for the California Division of Highways on the Fairfield job is F. M. Babcock. Homer Holmes is project superintendent for Gordon H. Ball, Inc., on the $4-million job. F. E. Appel is Ball's paving superintendent.

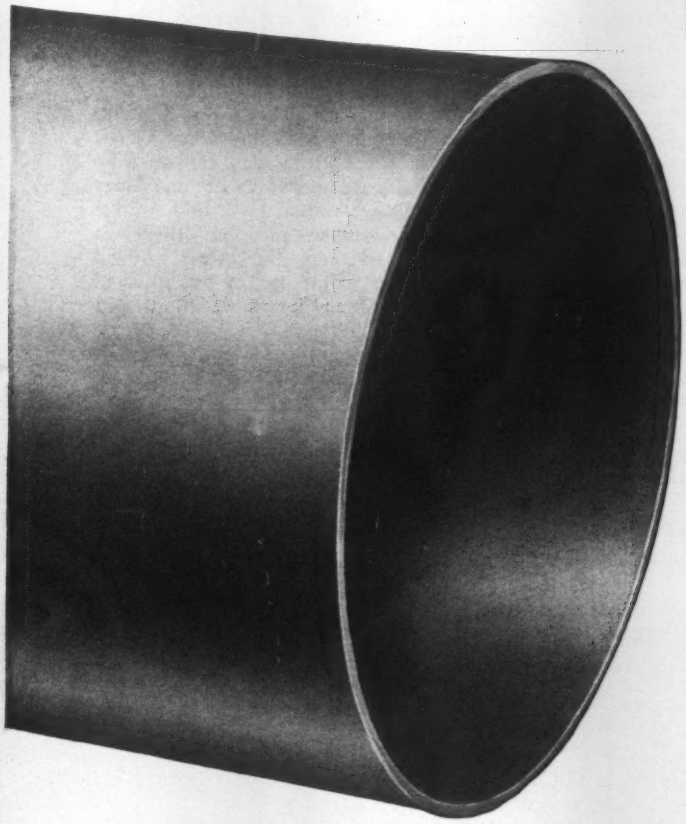
PAVER carries vibrating plates and drums of plastic tape (arrow) for longitudinal joint.





SECTION

Introducing Bethlehem's Bell-and-Spigot Joint, with Gasket



Here's a joint that promises new ease and speed of installation, added to the many well-known advantages of *steel* pipe.

We make it in diameters from 24 in. through 120 in., but if you have something a little smaller or larger in mind, let's talk it over.

And this joint is *tight*. We've tested it to over 450 psi (more than double ordinary working pressures) *and it didn't leak a drop.*

We can line and coat the pipe at the shop with top-quality coal-tar enamel, and wrap it if desired. This gives you the best, longest-lasting protection that money can buy, plus high flow capacity. But if other coating combinations are preferred, we'll supply the pipe to comply.

As with all steel pipe, every single 40-ft length undergoes a hydrostatic test well in excess of the design working pressure.

If you're thinking about installing a large-diameter water main, let us give you more information about our new Bell-and-Spigot Pipe. We suggest that you have a talk with the people at the Bethlehem sales office nearest you.

Steel

for Strength
. . . Economy
. . . Versatility

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA. Export Sales: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

BETHLEHEM STEEL

Steel Drapes Guard Twin Tunnels

Five years of work and $7.5 million in construction contracts have eliminated one of the worst traffic bottlenecks in Colorado.

In doing so, the Colorado Department of Highways protected a high rock slope with steel drapes made from chain-link fencing. The drapes stabilize the cut slope and prevent loose rock from falling on the road.

The problem existed in precipitous Clear Creek canyon, some 30 miles west of Denver and just east of Idaho Springs. Here two major transcontinental highways—US 40 and US 6—plus a county road and a mountain stream come together in a narrow spot in the canyon. The three roads—one of them four-laned—funnel tourists and pleasure seekers to and from the mountain playgrounds to the west.

The new route is part of Interstate 70, which traverses Colorado from east to west and will go through a new tunnel under the Continental Divide (ENR Aug. 17, p. 25).

The Colorado Department of Highways executed three major projects to ease traffic problems in the Idaho Springs-Floyd Hill complex and minimize winter driving hazards. The use of steel drapes for stabilization and rockfall control was part of work done on twin, two-lane, one-way tunnels through a jutting promontory between Floyd Hill and Idaho Springs. The concrete-lined tunnels have an inside width of 32 ft at the bottom and a vertical height at the center of about 24 ft. Barrel of the north tunnel is 741 ft long; the south, 696 ft.

The tunnels and associated work cost about $2.5 million. They were opened to traffic in June.

The contractor on the tunnels—Colorado Constructors, Inc. of Denver—installed the steel drapes high on the rock slope above the east entrance to the north tunnel.

The steel drapes are made of sections of 10-ft wide chain link fence composed of No. 9 gage galvanized wire. Each length of fencing overlaps the adjacent ones by 6 in. Workmen installed a total of 1,100 lineal feet of 10-ft fencing.

Colorado Constructors used 252 6- to 8-ft long rock bolts spaced 9-ft, 6 in. c-c to pin the fencing to the canyon wall. Bolts are A-306 low carbon steel bars with a minimum yield point of 30,000 psi. A 6 x 6-in., $\frac{3}{8}$-in. thick steel bearing plate and nut on each bolt outside the fencing lock the fencing in place.

Specifications limit the depth of bolt holes to 68 in. for 6-ft bolts, and 92 in. for 8-ft bolts. The forepart of the hole can be $1\frac{1}{2}$ in. in dia; the last 12 in. may not exceed $1\frac{3}{8}$ in. dia to assure adequate bolt anchorage. Nuts are tightened to a torque of at least 200, but not more than 300, ft-lb each.

To install the drapes, Colorado Constructors suspended a drilling platform from the end of a 172-ft boom and jib of a crawler crane. Air pipes and hose ran up the boom and over to the drilling platform. Workers draped the fencing over the slope; others, working from the suspended platform, drilled the holes, drove the bolts and installed the bearing plates and nuts.

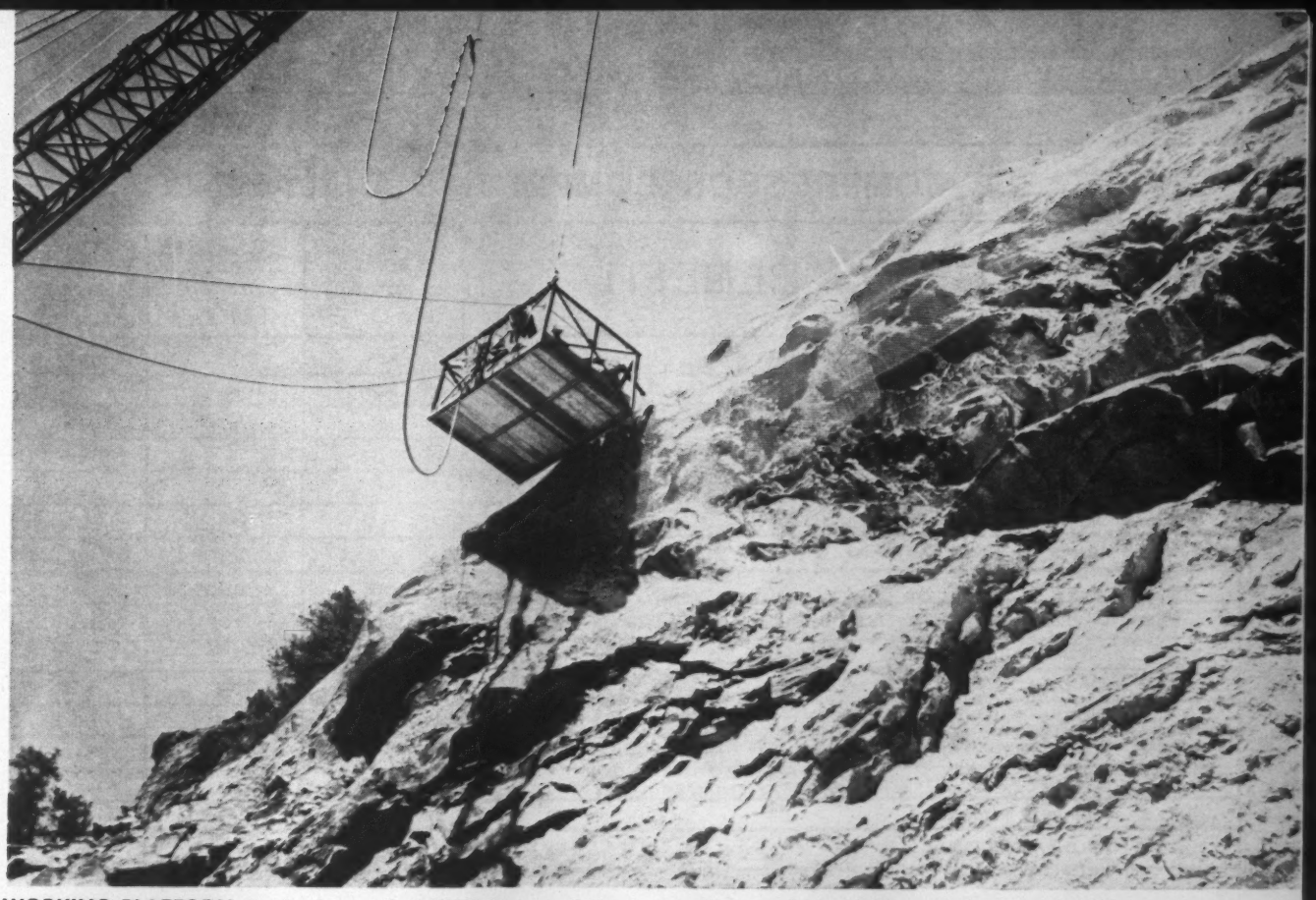
The contractor also installed 3-ft high fencing in the conventional vertical position near the top of the canyon wall, above the steel drapes. Some 3-ft fencing was installed on the rock slope above the west portal of the north tunnel. Purpose of the 3-ft fencing is to catch occasional small rock falls.

The other two large projects in the Idaho Springs-Floyd Hill roadbuilding complex were:

- A four-lane bypass of Idaho Springs. This $3.3-million project included an interchange with Colorado 103 leading to the top of 14,262-ft high Mount Evans, the highest automobile road in America. Builders changed the course of Clear Creek and shoved the highway against cliffs at the south edge of the town. The bypass was opened late in 1958.
- The three-level Floyd Hill interchange, located about 5 miles east of Idaho Springs. This is where US 40, US 6, a county road and Clear Creek meet in the bottom of a canyon only 200 ft wide. The two westbound lanes of US 40 are carried on a high bridge above the stream and the other two highways to meet the nearly vertical canyon wall. This project was finished late in 1959 at a cost of about 1\frac{3}{4}$ million.

Engineers of the Colorado Department of Highways designed the tunnels and associated structures, and supervised construction. George N. Miles is district engineer at Denver; Reuben Hopper is resident engineer. Project manager for Colorado Construction was Lewis Chinn.

TWIN TUNNELS speed tourists and local traffic through precipitous Clear Creek canyon on



WORKING PLATFORM dangles from end of 172-ft boom and jib of a crawler crane during drilling of holes for rock bolts.

Interstate 70 west of Denver.

ROCK BOLTS hold chain link fencing against cut slope to prevent rock falls.

WORTHINGTON COMPRESSOR NEWS:

PORTABLE COMPRESSOR COMPETITIVE ANALYSIS CHART

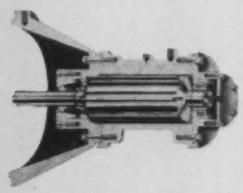
FEATURE OR BENEFIT	MONO-ROTOR	TWO-STAGE	SCREW-TYPE
DESIGN PROVEN IN CONSTRUCTION INDUSTRY	YES	YES	NO
ONE STAGE	YES	NO	YES
SINGLE ROTOR	YES	NO	NO
MAIN BEARINGS	2	4	4
TIMING GEARS	NO	SOME	YES
OIL SEALING	YES	YES	YES
SIMPLE CYLINDER SHAPE	YES	YES	NO
OIL PUMP NEEDED	NO	YES	YES
CRITICAL ALIGNMENT OF ROTORS	NO	NO	YES
TOTAL WEIGHT	LEAST	MORE	MORE
AVAILABILITY	NOW	NOW	?
CLUTCH	YES	SOME	NO
FEWEST PARTS	LEAST	MOST	MORE
MAXIMUM AMBIENT TEMPERATURES	125°	125°	115°
WARRANTY PERIOD	1 YEAR	*90 DAYS	*90 DAYS
FIELD PROVEN	YES	YES	NO

*(USUAL)

ANALYSIS PROVES THAT NEW MONO-ROTOR HAS BEST DESIGN

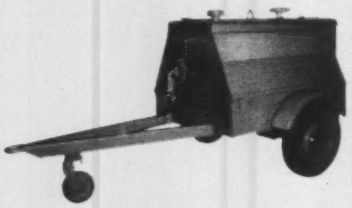
The easiest way to evaluate the compressor designs available today is to draw your own comparison chart. Above is one such chart covering many valid points of comparison between three compressor designs available—the screw type, the two-stage rotary and the new Worthington Mono-Rotor Blue Brute compressor. It clearly shows the new Mono-Rotor's superiority.

The new Worthington Mono-Rotor compressor is built with just one stage . . . just one rotor . . . just two bearings . . . no gears and no oil pump. It is obviously less complex than either of the other designs.



THE MONO-ROTOR HAS 1 ROTOR... 2 BEARINGS...NO GEARS...NO OIL PUMP

What proof of dependability is there for the Mono-Rotor? Over the last three years, this new compressor has been given what is probably the most thorough field testing ever given any compressor introduced to the construction industry. Tests have been so satisfactory that Worthington has extended the Warranty of these units to one full year from the usual 90-day period.



NEW 125' MONO-ROTOR COMPRESSOR

One of the most important points of comparison is the high temperature capability. The Mono-Rotor performs satisfactorily in the up to 125°F temperatures encountered in many domestic and foreign regions.

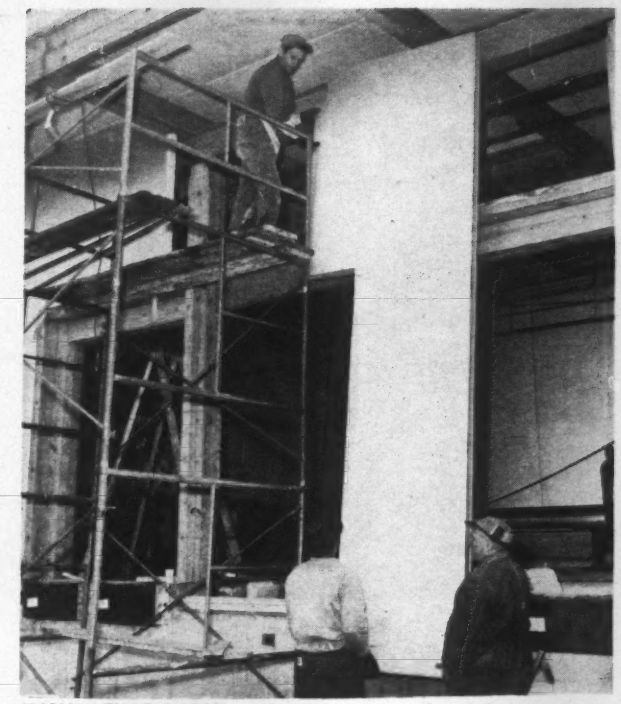
Note, too, that Worthington retains the clutch in the Mono-Rotor. Not necessary in daily operation, it still is helpful for very cold weather starting—and a real convenience in engine servicing.

Not noted in the chart is the fact that the new Worthington Mono-Rotors are 20% lighter in weight and are designed for improved towing and tracking. The third wheel is standard. It runs all day on one tank of fuel and has other features, too.

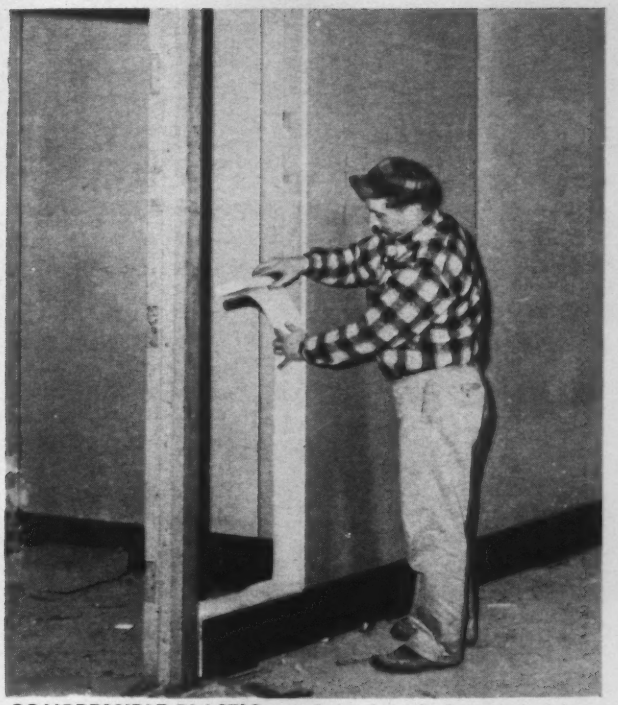
The Mono-Rotor Blue Brute can now be ordered in the 85', 125' and 250' sizes. See it . . . rent it . . . or buy it at your Worthington dealer listed in the Yellow Pages under "Compressors". Or write Worthington Corporation, Dept. 60-38, Holyoke, Mass. In Canada, Worthington (Canada) Ltd., Brantford, Ontario.

WORTHINGTON

PRODUCTS THAT WORK FOR YOUR PROFIT



INSULATING WALL, cut with power saw, fits easily into place.



COMPRESSIBLE PLASTIC strip helps form flush, sanitary joint.

Aluminum Panels Wall in Cold Rooms

Aluminum sheets laminated to plastic insulation form the nonload-bearing exterior walls and partitions of a one-story Pfaelzer Brothers Inc., meat-packing plant in Chicago. Reynolds Metals Co. developed the panels, called Reynotherm, specifically for this type of plant.

Pfaelzer's 75,000-sq ft windowless plant incorporates 75,000 lb of aluminum in its construction. This total includes aluminum windows, mullions, angles and other accessories. But most of the aluminum in the steel-frame building is in the walls and partitions.

The panels are 14 ft high and 4 ft wide. Their aluminum facings sandwich between them a 4-in. polystyrene insulating core, and make no through-the-wall metal-to-metal contact. Panels 8 in. thick wall the freezer rooms.

Flanged on all sides, each panel fits tongue and groove into floors, ceilings and other panels. Blind aluminum rivets fasten them securely.

The designer chose the aluminum panels because they should reduce maintenance costs and offer high insulating value. Since they are light weight, they are easy to handle and economical to transport. Erection is simple and quick. Also, the panels permit flexibility in expanding or changing spaces within the plant, since they can be moved about and reused. And significantly, initial cost is about the same as that of conventional insulated walls for meat-processing plants.

Insulated panels are used inside the plant as well as on the outside because the refrigerating and ventilating systems are complex. Rooms are maintained at different temperatures; one may keep 10 F, another at 45 F.

Aluminum sheets for the panels are 0.032 in. thick and diamond embossed. They are bonded with epoxy to the insulating core. Interior facings have a natural aluminum finish, but the outside of exterior panels is anodized.

Reynolds developed a flush, sanitary joint that is vapor resistant and air tight. The joints contain a compressible urethane strip. After the panels are riveted together, a calker applies a two-part polysulfide sealer to the joints.

Architects for the Pfaelzer plant are A. Epstein and Sons, Chicago. The contractor is Seco Construction Co., also of Chicago.

POLYSULFIDE COMPOUND applied to all joints completes the sealing process.

CHICAGO will get two high-rise apartment projects—Lakefront Plaza and Illinois Center—over Illinois Central tracks.

Developers Plan Big Use of Rail

Two major building projects just east of Chicago's Loop add up to the largest privately financed program ever undertaken in the Windy City.

The two projects are located side-by-side on air rights over railroad tracks. The larger of the two projects is just east of the 41-story Prudential Insurance building, which also stands on air rights (ENR Dec. 16, 1954, p. 35).

The first three buildings to be constructed, high-rise apartments, are now in the design stage. Two will be 52 stories and the other, 39 stories.

Sponsors of the larger of the two projects, "Illinois Center," estimate its initial cost will be $250 million, with a possible ultimate cost of over $500 million. No estimate is available on the cost of the smaller project, "Lakefront Plaza," but its sponsors say it will be a ten-building, multimillion-dollar development along Lake Michigan.

• **Illinois Center**—Construction is expected to start soon on the first two apartment buildings in an 18-acre area involving about $35 million worth of air rights of the Illinois Central Railroad. The area is north of Randolph St. and between Michigan Ave. and Lake Shore Drive.

Completion of both buildings is set for August, 1963, says A. C. Allyn, Jr., president of Illinois Center Corp., sponsors of the project.

Naess & Murphy, Chicago architects-engineers, will design the buildings, each to contain 1,250 apartments.

Over-all plans for the initial project call for the construction of two more apartments, a hotel and office buildings.

The 52-story apartment buildings will have steel frames, with reinforced concrete walls. Each building will contain 1,040,000 sq ft of floor area. Apartment sizes will range from one-room efficiency to three-bedroom types, with rental charges of $60 to $70 per room.

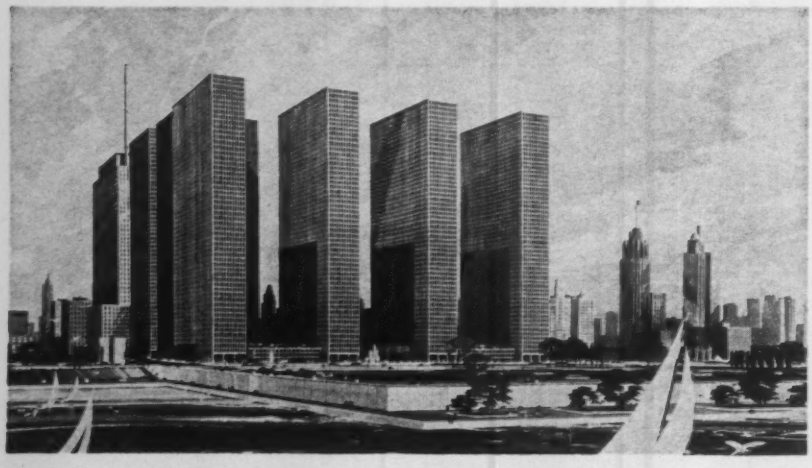
Pencil-slim in appearance, the apartment buildings will measure 63 ft in width and 330 ft in depth. Windows will run from floor to ceiling. Six high-speed elevators and one freight elevator will serve each building.

Garages on three subsurface levels of the apartment buildings will provide parking space for over 3,000 cars. A central plant will provide air-conditioning and heat for all buildings.

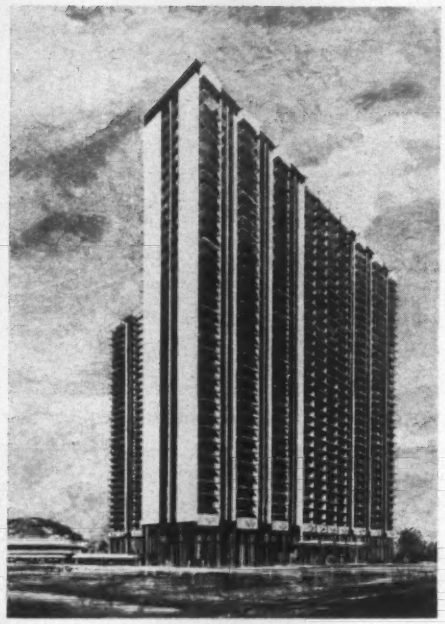
Two large swimming pools, convertible to ice-skating rinks in the winter, will serve the apartments.

The hotel and office buildings will rise about 50 stories. The hotel will contain about 2,500 rooms and the office complex about 2 million sq ft of usable floor space.

• **Lakefront Plaza**—Construction will start in January on a T-shaped apartment building just east of Lake Shore Drive and north of Randolph St. It,



ILLINOIS CENTER will begin with two 52-story and one 39-story buildings.



LAKEFRONT starts with 39-story building.

Air Rights

too, will be built on air rights purchased from the Illinois Central Railroad (for a reported $2.7 million) and includes frontage of 246 ft on Lake Shore Drive and 363 ft on Randolph St.

The $27-million building to be known as "One Lakefront Plaza", will contain 940 apartments, says Jerrold Wexler, president of Jupiter Oils, Ltd., the developer. It will rise to a height of 39 stories above ground level, or 35 stories above the level of Randolph St. There will be two floors of automobile parking below street level.

Issuance of a $20-million first-mortgage commitment by the Federal Housing Administration made the project possible. Hirschfeld, Pawlan and Reinheimer, Chicago, are the architects.

All the apartment units will be air-conditioned. There will be 252 two-bedroom units with two baths; 648 one-bedroom and 40 studio apartments. Rents will range from $140 to $350 per month.

The exterior building construction will be a white-enamel brick.

A recreation center, covered by a retractable dome, will connect with One Lakefront Plaza. It will contain an Olympic-size swimming pool, health club and other recreational facilities. The dome over the pool will be opened or closed according to the weather.

Although details have not been announced, over-all plans include the construction of additional apartment buildings, a hotel and perhaps an office building.

DIAMOND BLADE SAWING OF CONCRETE

Case Report: PENNSYLVANIA Hwy.

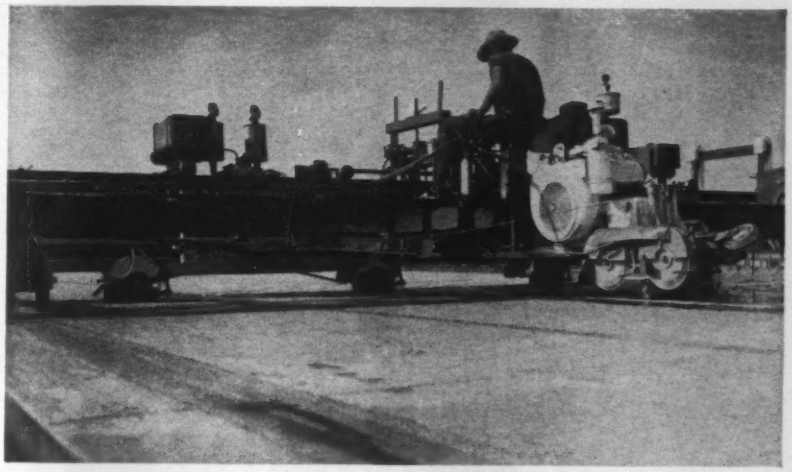
COST-$.073 per linear foot

TYPE OF WORK — Pennsylvania Highway

AGGREGATE — Slag aggregate

SAWING OPERATION — Center line only was sawed — all sawing done with diamond blades.

DIMENSIONS — Longitudinal 3″ x 3/16″.



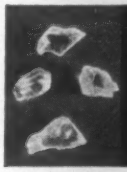
The case history cited above is typical of diamond blade sawing on concrete highway and runway projects. The cost-per-linear-foot figure is all-inclusive, accounting for labor, equipment, diamond saws, overhead and profit.

Diamond blade sawing makes possible significant reductions in time and labor costs. Precisely controlled joints are cut by high-speed, semi-automatic procedure—maintaining maximum concrete strength and homogeneity in the joint areas—without interfering with or delaying the actual paving operation.

The economy of diamond blade sawing is even more interesting and impressive to the maintenance engineer. He has learned that *sawing is producing the only joint that has proved reduction in maintenance costs.* Further, these savings are running as high as 50%!

Modern diamond blade sawing results are a matter of record based on performance in many states.
For detailed information and field-use reports from state highway officials and contractors, write to Engelhard Hanovia, Inc., for Report #101.

Engelhard Hanovia, Inc. is the leading supplier of SND-MB diamond abrasive, a result of research that has greatly increased diamond cutting efficiency, to diamond blade manufacturers



★ENGELHARD HANOVIA, INC.★
INDUSTRIAL DIAMOND DIVISION
113 ASTOR STREET • NEWARK 2, NEW JERSEY

Rigid frame spans 168 ft to carry pedestrians and light vehicular traffic

Field splices followed dark lines on girders. Counterweights (arrows) reduced

Welded Steel Frame Straddles

By Robert Kao

A welded steel rigid-frame structure overpasses the Milwaukee East-West Expressway, providing 168 ft of clear span.

The design provides an economical answer to the desire of many engineers to eliminate the center pier on bridges that cross multi-lane highways, particularly in urban areas where a narrow median strip is unavoidable.

Such spans must be quite long. To bridge an 8-lane expressway from edge of shoulder to edge of shoulder usually requires a span greater than 130 ft. Skew and curvature add additional length. As the end spans of an overpass of this type are relatively short in comparison with the center span, a conventional continuous structure will not be balanced and uplift at the abutments will result. A simple span design will require excessive structural depth that will be neither economical nor aesthetically desirable.

The Cemetery Access Road bridge presented a problem of this kind. The bridge is designed to carry pedestrian and light vehicular traffic to the Veterans Administration Cemetery in nearby Wood, Wis. At the point of crossing the expressway comprises six 12-ft through lanes, two on-and-off ramps on the inside of the through lanes, two 12-ft shoulders and an 8-ft median.

Total length of the structure is 260 ft from end bearing to end bearing. Tops of the haunched girders were cambered to follow the vertical curvature and to compensate for dead load deflection. The bottom of the steel follows a parabolic curve.

Girder depth in the center span varies from a minimum of 3 ft 4 in. at the midpoint to over 5 ft at the hip. In the end spans, the girders have a constant depth of 2 ft 10 in. for about half the span lengths, then increase parabolically to maximum depth. Flange plates are 20 in. wide, vary in thickness from $\frac{7}{8}$ to $1\frac{7}{8}$ in. There are 10-in. by $1\frac{7}{8}$-in. side plates welded to the web at points of sharp curvature to make up for any loss in effective flange area due to the tendency of the flange plate to curl around the web.

Legs of the rigid frame also are tapered. The designers placed a structural tee to the inside face of each leg to stiffen it transversely. Girder spacing is 22 ft 6 in. Floor beams are 24-in., 76-lb WF sections, and ST 4 WF 12 lower lateral bracings complete the framing system.

To reduce horizontal thrust at the pedestals so that foundation piles would not be overstressed in bending, counterweights are provided at each end of the structure. Each counterweight is a steel compartment 22 ft 6 in. wide, 12 ft

Robert Kao—who says the bridge described here was the brain-child of several designers—is a bridge engineer in the Milwaukee office of Howard, Needles, Tammen & Bergendoff.

to veterans cemetery at Wood, Wis.

horizontal thrust at the pedestals.

Framing system ties main girders together.

New Multi-Lane Expressway

long and the full depth of the girder, filled with concrete and weighing about 110 kips.

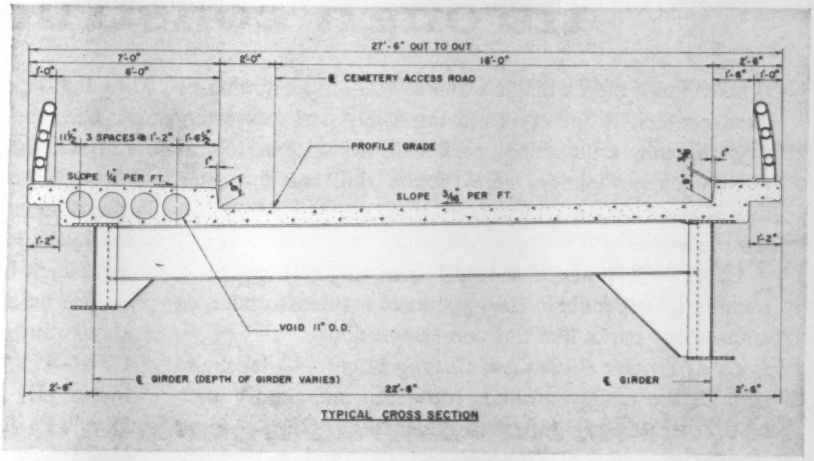
The fabricator fashioned the haunched girders so that, in their fully cambered position before concrete in the counterweights was cast, the ends of the girders were 4 in. above their final elevations. The counterweights deflected the girders to their true position, thus creating an inward thrust in the legs. The contractor followed a carefully planned sequence of placing concrete for the structure to distribute evenly the deflection due to dead load.

The structure has an 18-ft roadway, a 6-ft sidewalk on one side and a 1-ft, 6-in. safety walk on the other. The design provided four 11-in. preformed void in the sidewalk. There are rocker shoes at the pedestals.

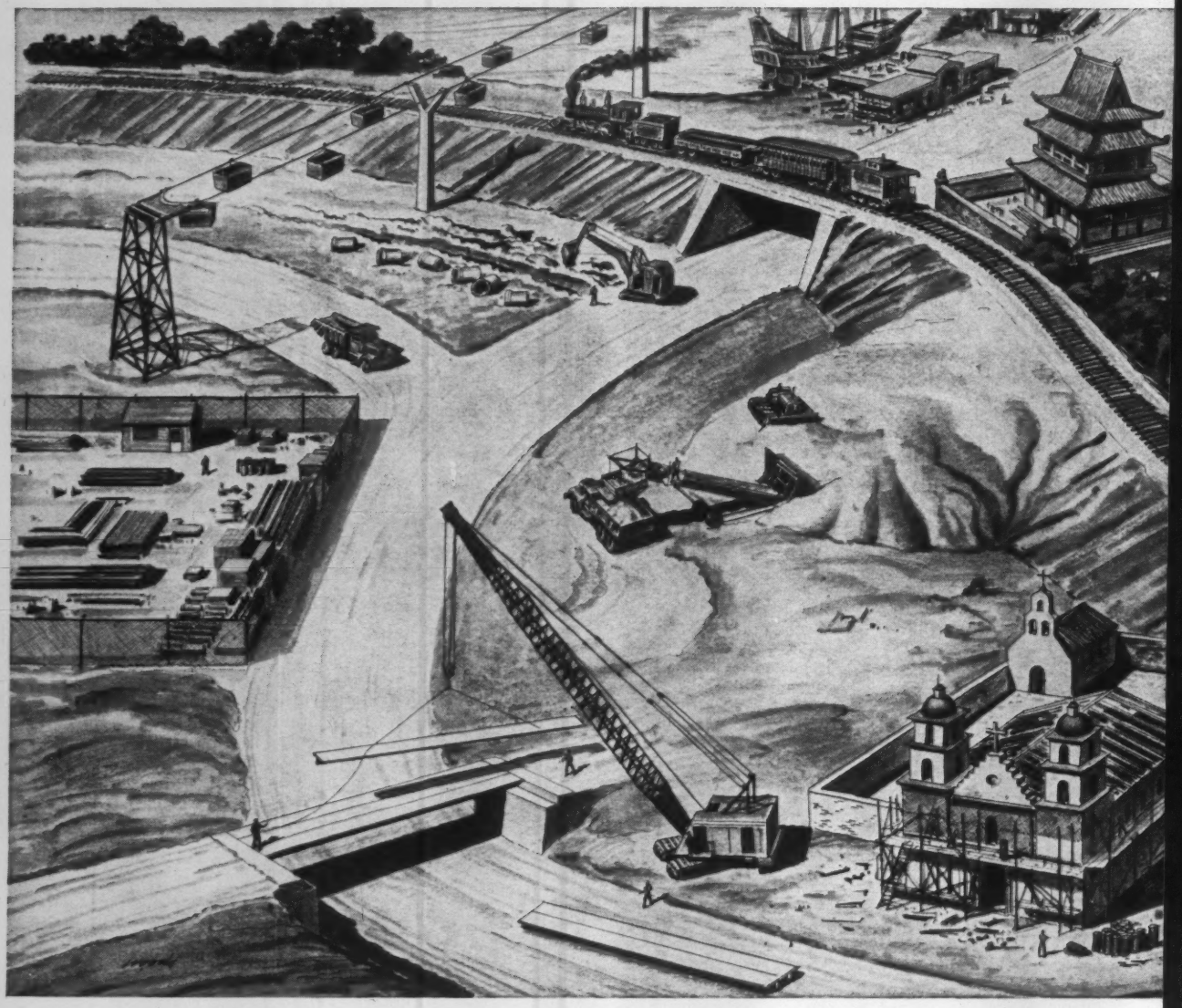
The entire structure was joined by welding. The erector chose to weld each leg together with its end span on the ground. Joints were made on one side in the horizontal position; on the other side, in the vertical position.

Steel unit price was 19 cents per lb, despite the relatively large amount of fabrication and welding.

Henry Wildschut is Highway Commissioner and Director of Public Works of Milwaukee County; Herbert Goetsch is expressway engineer. Consulting engineers Howard, Needles, Tammen & Bergendoff designed the structure.



Cross section shows clean lines, simple details.



Past and future come to life... through construction skill and

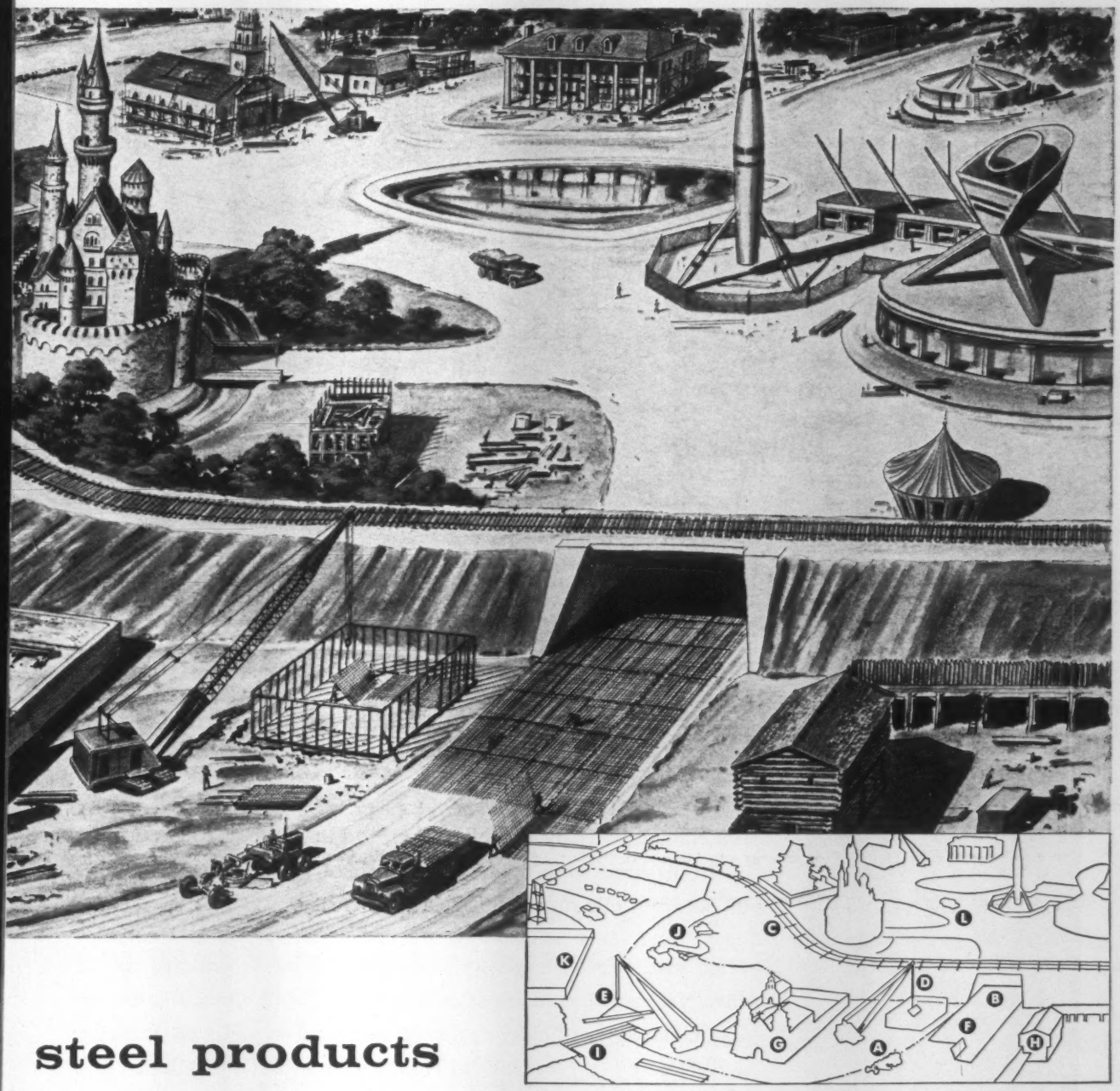
It takes more than a magic wand to build modern amusement centers. A far cry from the kiddy park of yesterday, the new educational park calls for vision, logical planning, coordination, construction skill and ton after ton of construction materials — including many different steel products.

CF&I — a nationwide steel company — supplies a number of dependable steel products for construction of amusement parks like the one shown above.

CF&I Grader Blades and Cutting Edges **(A)** level and smooth the craggy ground, converting an almost inaccessible wasteland into a workable area. *CF&I-Clinton Welded Wire Fabric* **(B)** adds extra strength to concrete roads, culvert pipes, buildings and parking surfaces, making the concrete more durable and crack-resistant.

The model train, like so many of today's fast-moving railroad cars, rides on *CF&I Rails* **(C)**. Cable cars glide through the air on *CF&I-Wickwire Rope* **(D)**, which is also widely used on cranes, trench hoes and carry-alls. Wickwire Ropes are selected because they last and have extra-high breaking strength.

The motto of contractors building such huge projects should always be: safety first. Consequently, they specify *CF&I-Wickwire Wire Rope Slings and Sling Attachments* **(E)** for hoisting jobs. And they insist on *Cal-Tie Wire* **(F)** for fastening road fabric, because this quality CF&I wire is available in handy reels which eliminate the hazards of tying with shoulder coils.



steel products

CF&I Lok-Twist Stucco Netting (**G**) strengthens the walls of many structures, while thousands of *CF&I Nails* (**H**) will hold wooden structures tightly for years.

CF&I Prestressed Concrete Strand and Wire (**I**) is chosen to give tensile strength to the prestressed concrete girders. And *CF&I Industrial Screens* (**J**) accurately classify sand and gravel.

CF&I-Realock Fence (**K**) protects equipment storage areas and is often erected around the entire park. Also, many of the trucks and service vehicles are equipped with *CF&I-Wickwire Automotive Springs* (**L**).

On large and small construction jobs all over America, you'll see CF&I Steel Products. They can be counted on to do the job safely and at reasonable cost. Get complete information about any CF&I steel product by calling our nearest sales office, or write for Catalog G-104 "CF&I Steel Products for the Construction Industry." 7950

THE COLORADO FUEL AND IRON CORPORATION

DENVER • OAKLAND • NEW YORK

CF&I STEEL MADE IN U.S.A.

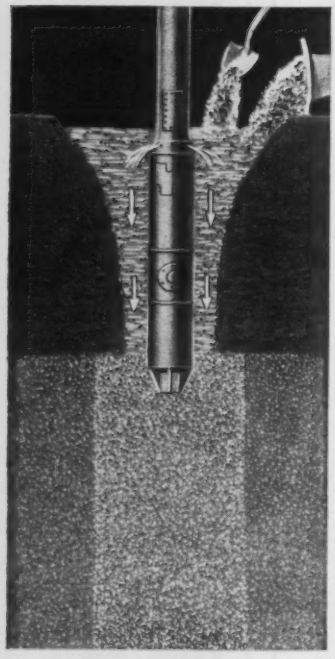


Diagram shows the lower end of a Vibroflot® machine in action to pre-settle sandy soil. Compaction is accomplished by a simultaneous saturation and vibration of the granular materials involved. During the application, fresh sand is added at the surface to compensate for the loss in volume caused by the increase in density (bearing capacity) of the compacted soil.

19th Factory Foundation on Sand

is this new container plant at Saratoga Springs, New York. 493 compactions by Vibroflotation,® adding about 2500 cu. yds. of fresh sand, were made to a depth of 20' below the footings to obtain a minimum 70% relative density.

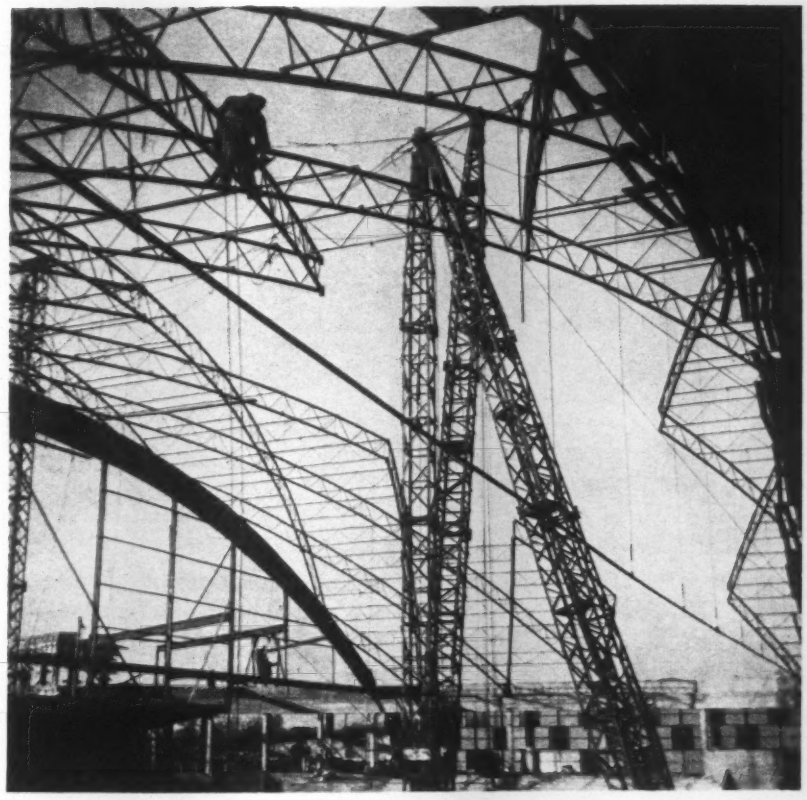
High load bearing capacity was achieved by Vibroflotation® at these factory sites: a paper mill at North Bend, Oregon; a cheese plant at Clare, Michigan; a pulp mill at Terre Haute, Indiana; a ribbon and carbon plant at Holmesville, Ohio; a magnetic oxide plant at Hastings, Minnesota; a textile plant at Bethune, South Carolina; a cellulose plant at Jesup, Georgia; and a fertilizer plant at Fort Meade, Florida.

Write for Booklet E-31

VIBROFLOTATION FOUNDATION CO.

930 FORT DUQUESNE BOULEVARD, PITTSBURGH 22, PA.

International



Czechs Treat a Roof Lightly

A skewed-frame cylindrical-arch roof over a skating arena near Prague weighs only 6.2 lb per sq ft but covers nearly 40,000 sq ft and spans 191 ft.

The frame is composed of welded, seemless steel pipe, fabricated into 400 sections that workmen bolted together in mid-air. It covers the 13,000-seat Kladno arena, 20 miles northwest of Prague, Czechoslovakia.

Josef Zeman, Prague designer of the arena roof, based his lightweight design on four conditions. He had to:

- Tie several existing buildings into the new roof structure.
- Provide a long span.
- Place the lightest possible dead loads on existing building walls around the open arena.
- Make the roof look light.

Existing concrete grandstands and one roofed bleacher proved strong enough for the roof's vertical loads. Reinforced concrete colonnades added on their rear sections carry the bases of the skewed frame. Steel pipe ties spanning the arena between frame bases absorb all horizontal thrust.

Each of the arch frame members (a top and bottom chord with welded diagonals) weighs 440 lbs and is 26 ft 3 in. long. This basic part—with left or right hand connections at its ends—plus three types of stringer elements are the only parts for the entire roof.

At each end of the arena, welded steel plate arches block off the skewed roof framing and carry the end wall framing. Each arch, spanning 191 ft with a rise of 28 ft, was welded in place from two 8¼-ton prefabricated half arch sections.

Corrugated sheet iron covers the roof frame.

Design requirements demanded a 10 lb per sq ft allowance for roofing, plus a 21-psf wind load and 15-psf snow load.

Actual weight of the structure is low. Frame and cross ties total only 3.75 psf. With the corrugated roofing, this comes to only 6.2 psf.

A crew of 10 men working with one stiffleg derrick mounted at the center of the arena erected the roof frame in 10 weeks. Sheet metal workers finished the corrugated work in three weeks. Total cost—at the official rate of exchange—comes to $1.7 million.

Druzstvo Stavba, Prague, the state building trust, acted as its own general contractor.

Proved Cost Saver

CURE and SEAL CONCRETE WITH 1 PRODUCT

THOMPSON'S WATER SEAL

Eliminates wet sacks, papers, hosing and spraying

Spray deep penetrating, colorless Thompson's Water Seal on fresh concrete to cure and seal in one operation. Save time . . . save labor.

Effectively controls moisture loss for 28 days and beyond.

Assures uniform curing even in hot, dry weather.

Helps reduce checking, cracking, spalling.

Produces harder, dust-free surface.

Eliminates waterproofing concrete floors.

Permits adequate time for smooth troweling.

Send for technical bulletin and Contractors Case History file.

A proved bond breaker for pre-cast, tilt up and lift slab construction. Permits easy, clean separation of slabs, walls, pre-cast members.

Available in 5 and 55 gallon drums from building supply stores, paint and hardware dealers.

4932

Thompson's

MANUFACTURERS OF FINE PROTECTIVE CHEMICALS SINCE 1929

E. A. Thompson Co., Inc., Merchandise Mart, San Francisco 3, California

San Francisco • Los Angeles • San Diego • Portland • Chicago • Seattle • Denver • Dallas Houston • St. Louis • St. Paul • Detroit • Philadelphia • New York City • Memphis • Cleveland • Factory: King City, California

Don't buy trouble on the installment plan!

buy

CLOW cast iron pipe

the first cost is the LAST cost

You get what you pay for when you use CLOW Cast Iron Pipe...generations of trouble-free service.

Costly repairs, torn up streets, loss of water, and interruption of service are held to a minimum. Quality pays off. Make your first cost your *last* cost.

JAMES B. CLOW & SONS, Inc.
201-299 North Talman Avenue
Chicago 80, Illinois

Subsidiaries:
EDDY VALVE CO. • Waterford, N.Y.
IOWA VALVE CO. • Oskaloosa, Iowa

CLOW CAST IRON PIPE

Field and Office

Copter Totes Concrete up Canyon

Converting a helicopter into a flying ready-mix concrete truck saved Southern California Edison Co. five to eight days' work building three transmission towers.

Instead of pack-carrying dry aggregates, water and structural steel a tortuous ¾ mile through the Santa Susanna Mountains, a 305-hp helicopter shuttled supplies up the boulder-strewn canyon. Flying time on the project was 8½ hours.

The light (1,700 lb) helicopter hauled a total of 18½ cu yd of ready-mix concrete for 12 foundations. It delivered up to 5 cu yd, or 750 lb, each trip.

Three steel-reinforced canvas bags were used to speed up the operation. While one bag was in transit, one was being washed and the other filled. Concrete was released into the forms by the ground crew. The pilot could jettison the bag, in event of trouble.

All steel for the 60-ft towers was air-lifted in only 45 minutes. The towers were ready for line stringing in two days, not including excavation work. The towers are about 30 miles north of Los Angeles.

Aluminum Arms Top Steel Towers

Aluminum and steel have teamed up to form a new type of high-voltage transmission tower. The hybrid pylon offers maintenance savings and averts the necessity of de-energizing the line to paint the cross-arm cage.

At least two major utilities have adopted the new design. In these cases, the main reason for using aluminum tops on steel-based towers is to avoid painting the "hot" sections. Also, a contaminated atmosphere from surrounding industrial plants, either existing or anticipated, may corrode steel.

In New York State, the towers belong to the Niagara Mohawk Power Corp. Two-hundred of the new towers will carry two 115-kv circuits between the New York State Power Authority's Niagara Falls power station and the utility's lines. The 108-ft towers will bear a total load of 400,000 lb of aluminum.

The Structural Division of the Aluminum Company of America, designer and fabricator of the aluminum sections, estimates that higher first cost of the aluminum will pay for itself in 14 years through reduced maintenance costs. American Bridge Division, U. S. Steel Corp., fabricated the steel.

On the Illinois side of the Mississippi River, towers owned by Union Electric Co., St. Louis, Mo., carry double 138-kv circuits. Forty towers stretch 13 miles to link the utility's Meramec Power Plant with existing lines in Lemay, Mo.

Total aluminum for this line is 108,000 lb. And again, Alcoa is the designer-fabricator of the aluminum tops. The Muskogee Iron Works, Muskogee, Okla., fabricated the steel.

Flood Prevention at Bethlehem, Pa.

COMMERCIAL liner plates support 13½ feet dia. tunnel excavation only 6 feet below four-track, main railroad right-of-way. 126" precast pressure conduit placed inside tunnel will handle mountain flash floods before they reach populated areas. A U. S. Corps of Engineers project. Tunnel contractor: Penn-Jersey Contractors, Inc., Wm. J. Hoy—General Superintendent.

Commercial Shearing & Stamping Co., Youngstown 1, Ohio

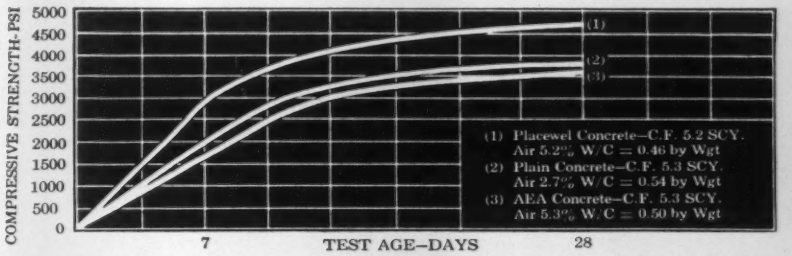
COMMERCIAL shearing & stamping

Increase concrete strength 30% with J-M Placewel...

the liquid admixture that gives you 5 key controls of concrete

Placewel®, a product of Johns-Manville, world's largest industrial user of portland cement, permits a new high in compressive and flexural strength. This superiority has been proved in millions of yards of concrete.

Placewel is a water-reducing, dispersing agent *plus* a catalyst. It is available with or without an air entraining agent. Placewel, by breaking up the cement flocs, releases water for lubrication that isn't normally available. Thus, mixing water requirements are cut without relying on air entrainment alone. The Placewel catalyst enhances the strength-gaining characteristics of portland cement. This unique combination of properties provides a 30% increase in concrete strength (see chart).



Compressive strength – performance of Placewel vs. plain and air entrained concrete

Less than three ounces of Placewel per sack of cement will also –

- Increase durability 350%
- Increase workability
- Improve dimensional stability
- Reduce permeability

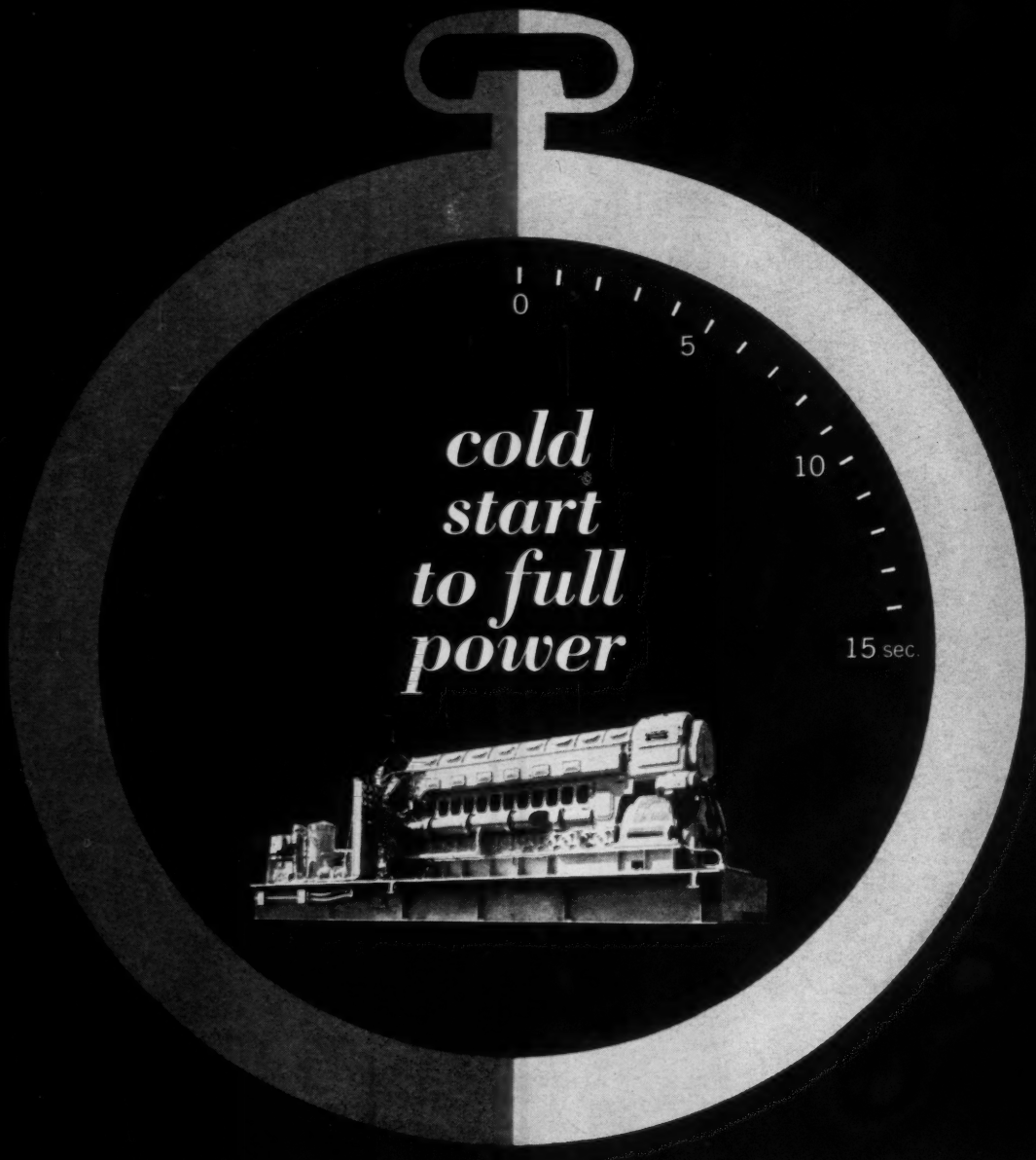
J-M Retardwel® is recommended when concreting conditions require longer placing and finishing time. Retardwel delays the initial set of concrete and yet provides higher 24 hour strength.

Architects and engineers the world over have learned that Placewel and Retardwel give them complete control over the concrete they specify. For full information and technical assistance write: Johns-Manville, Box 325, New York 16, N. Y.

JOHNS-MANVILLE

JOHNS-MANVILLE JM PRODUCTS

Celite Division



...15 seconds with Fairbanks-Morse Diesels

The F-M 38D8⅛ Opposed-Piston Diesel Generating Unit—with only 15 seconds *from cold start* to full power—gives fast, sure power for peaking or for standby use, together with impressive operating economies.

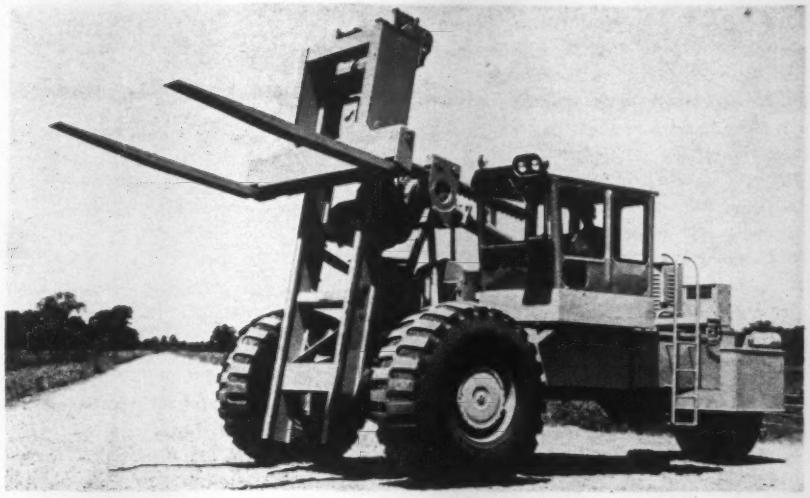
This unit requires no spinning reserve . . . uses no power until it starts, then produces up to 2500 kw per unit. Can be linked in multiple units.

Dependable? Service records of F-M Diesels prove dependability beyond a doubt (F-M pioneered the manufacture of diesels in America . . . has kept in the forefront ever since.)

Economical? The 38D8⅛ has 40% fewer moving parts than comparable engines of equal horsepower. This means reduced maintenance costs . . . fuel and lube oil savings.

Opposed-piston design minimizes vibration, produces fine balance . . . smooth power and instant response that result in 15 second full-power operation. Available with 4, 5, 6, 8, 10 or 12 cylinders, ranging from 450 to 2500 kw per unit, with automatic or manual controls. **For full details or custom specifications, write today to: S. K. Howard; Director of Marketing; Fairbanks, Morse & Co.; Beloit Division; Beloit, Wisconsin.**

FAIRBANKS MORSE
A MAJOR INDUSTRIAL COMPONENT OF
FAIRBANKS WHITNEY

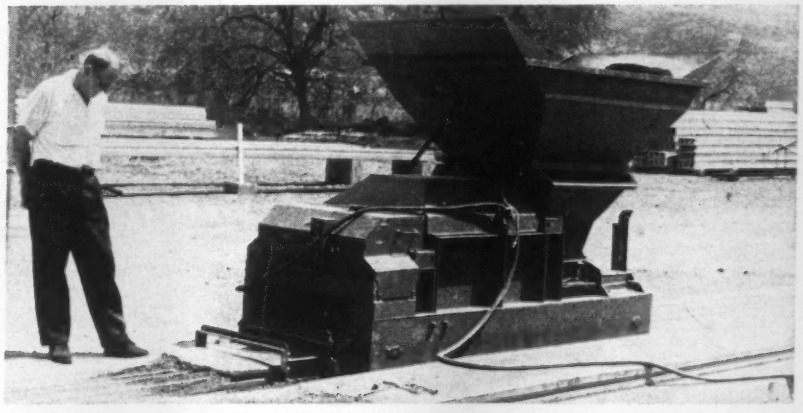


Electricity Powers Big Fork-Lift

Series FLT-20 electric-powered fork-lift trucks tote up to 20 tons.

Because the machine is electrically powered, it does not have clutches, transmissions, drive shafts or hydraulic lines. Individual electric gear motors at the points of work actuate the hoist, rack tilt and rear steering wheel.

A 210-hp diesel supplies power to ac and dc generators. All movements are governed from a console of electric switches. The console is part of the operator's seat and revolves to face the direction of travel. A three-wheel base permits a turning radius of 25 ft. Overall length, including forks, is 34 ft 9 in. R. G. LeTourneau, Inc., 2399 South MacArthur, Longview, Texas.



Machine Forms Prestressed Planks

A model of the Dodd Extruder forms solid prestressed concrete planks at the rate of 3,600 sq ft per 8-hour day.

Electrically powered, the machine traverses a plain flat bed by guiding itself along the prestressing strands. It does not require rails or forms of any type.

The mechanical former can produce roof and floor planks 24 in. wide, and 2 to 4 in. thick. It can make edges with V joint, tongue-and-groove, or ship-lap joints.

Depending on the length of the prestressing bed, the machine will continuously form concrete plank 400 to 500 ft long, on a 4-ft-wide bed.

The manufacturer claims that the Dodd Extruder will save up to 50% in labor costs. This saving is reckoned as an aid to closer delivery schedules. With more stock readily available, the producer can saw from stock lengths to meet the builder's needs on schedule. Leap Associates, Inc., P.O. Box 1053, Lakeland, Fla.

NF
name's
NEENAH
and
the
products
are
GRAY and
DUCTILE
IRON
CONSTRUCTION
CASTINGS
of finest
QUALITY
FINISH
UNIFORMITY

See for yourself—
stop by
BOOTH B65
at the APWA Congress
and Equipment Show

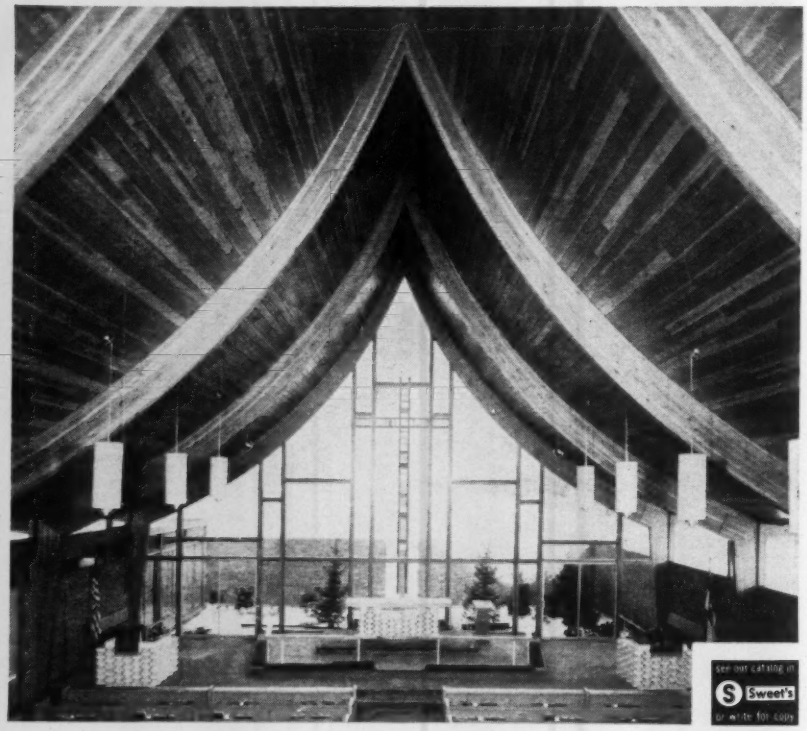
Name's Neenah . . . if we make it it's a casting . . . and the best.

New 168-page catalog shows our line. It's sent promptly when requested.

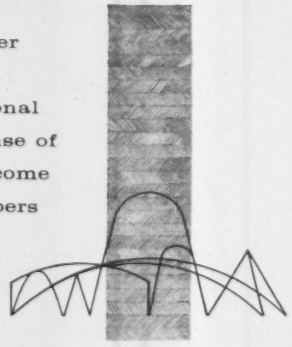
NEENAH FOUNDRY COMPANY
NEENAH • WISCONSIN
Chicago Office
5445 North Neva Ave., Chicago 31, Ill.

St. Johns Episcopal Church, Plymouth, Michigan. Architects-Engineers: Daniels Associates, Ann Arbor, Michigan. Contractor: Burger Construction Company, Plymouth, Michigan.

Space provided: nave with seating for 340 worshippers; narthex; 48′x64′ fellowship hall; kitchen; robing room; ladies' parlor; office; study; mailing and storage; men's and women's rooms; choir loft and storage rooms. *Structural framing:* glulam rigid frames with curved arm members spaced at 16′ in nave; glulam beams spaced at 12′ in fellowship hall. *Exterior walls:* brick; window walls of ¼″ plate glass in wood frames; sliding glass doors with aluminum frames. *Interior walls:* exposed brick; white sand plaster on block and stud partitions. *Floors:* Terrazzo in narthex; carpet in aisles and chancel; vinyl asbestos tile elsewhere. *Heating and ventilating:* forced air with ducts beneath slab. System has summer blower switch for ventilation only. *Lighting:* fluorescent in fellowship hall; incandescent elsewhere. *Roof:* built-up roof with white vinyl and asbestos fibre over Douglas Fir Tim-Deck. *Area:* 10,580 square feet. *Cost:* $14.50 a square foot.



The intimate warmth and beauty of glulam members and heavy timber decking complement the architect's design to create the deep emotional response so appropriate in the house of worship. Genuine economy is a welcome by-product of these functional members which were produced under strict quality control by America's most experienced laminators.



TIMBER STRUCTURES, INC.
P. O. Box 3782-C, Portland 8, Oregon

DIVISION OFFICES IN RAMSEY, N.J.; SCHILLER PARK, ILLINOIS; DALLAS, TEXAS
District Representatives in Major Cities Throughout the United States • Member A. I. T. C. and Producers' Council

New Product Briefs

Foamed Aluminum

Aluminum with gas-entrapped bubbles, called Alumacel. Weighs one-twelfth as much as solid aluminum. Floats. Used for room dividers, folding screens, solar screens and acoustical tiles. Dynamic Metals, Inc., Houston, Texas.

Steel Floor Forms

Hi-Bond steel floor decks provide concrete reinforcement without reinforcing bars and serve as permanent forms. Manufacturer says time savings are realized by eliminating separate working platforms, shores and removal of forms. Raised lugs on the panels give mechanical bond with the concrete. Inland Steel Products Co., P.O. Box 394, Milwaukee 1, Wis.

Bar Supports

Plastic discs, legs and chairs for spacing and supporting concrete reinforcing bars. Replacement of steel accessories prevents rust bleed by reducing electrolytic action of steel against steel. W. R. Grace and Co., Polymer Chemicals Division, 225 Allwood Road, Clifton, N. J.

Concrete Vibrator

Hi-Viber, motor-in-head type vibrator, for one-man operation. 230-volt, 180-cycle, 10,500 rpm. Operates as far as 200 ft from power source. Head is 20 in. long, has 1½- or 2⅜-in. dia. Portable gasoline engine generates power. Viber Co., 726 S. Flower St., Burbank, Calif.

Concrete Treatment

Tri-Kote cures, seals and hardens freshly placed concrete, and protects surface of existing concrete. One-coat application penetrates to ⅛ in. For buildings, runways, highways and dams. Can be painted, bonded and tiled. Chem-Search Inc., 2525 Park Ave., Minneapolis 4, Minn.

Proctor Needle

Acme Penetrometer, a commercial version of the Proctor Penetration Needle for measuring rate of initial set in concrete. For laboratory and field use. Six cadmium-plated Proctor needles, case and test report forms included. E. W. Zimmerman Construction Chemicals, Inc., 228 N. LaSalle St., Chicago 1, Ill.

Water Meters

Trident Model 60 sealed water meter. Split case and frost proof models available. Meters have non-fogging register, can be reset to zero, have totally enclosed gear train. Designed to fit into existing systems. Neptune Meter Co., Liquid Meter Div., 47-25 34th St., Long Island City, N. Y.

What's behind the Bulldog ?

With a pedigree reaching back over 60 years, the famous Mack Bulldog is today the recognized symbol of leadership in the heavy-duty truck field.

BALANCED

Balanced Design assures you Unmatched Performance.

The Mack concept of BALANCED DESIGN means Mack-engineered and Mack-built components which work together with maximum efficiency—not just when new, but after hundreds of thousands of miles of profitable operation. Only Mack offers trucks and tractors with true BALANCED DESIGN because only Mack makes all its own major components . . . makes them to standards of efficiency, ruggedness and precision accomplished nowhere else in the industry. MACK BALANCED DESIGN results in vehicles whose engines, clutches, transmissions, carriers, axles and suspensions work in close harmony. No trucks assembled with purchased components can achieve the uncommonly smooth, powerful, responsive and economical performance built into each Mack.

DESIGN

What's behind the Bulldog ?

Balanced Design assures you Undivided Responsibility.

The manufacturing concept which enables Mack to build BALANCED DESIGN into its vehicles also enables Mack to assume full responsibility for every truck or tractor bearing the famous Mack bulldog. You get this Undivided Responsibility because Mack alone insists on building its own major components. Competitive manufacturers without exception, buy many, if not all, of their components from outside vendors. Who guarantees these components? Who provides adequate service on them? Sometimes the truck manufacturer . . . sometimes the component manufacturer. Too often this means split responsibility and costly downtime.

There's none of this when you buy a Mack. Because Mack insists on building its major components, Mack assumes Undivided Responsibility for the entire vehicle. We build it . . . and we stand behind it 100%.

MACK-BUILT

...for your specific job

Mack B-40 and B-60 Series

Payloads: Rear dumper, 6-12 cubic yards—Mixers, with 5-8 cubic yards agitating capacity (in six-wheel models). **Engines:** 150, 180 and 205 h.p. diesel; 150, 160 and 185 h.p. gasoline.

Mack builds trucks and tractors in a wide range of capacities. Whatever kind of operation you have . . . whatever loads you haul . . . there is a Mack truck that will do the job economically and efficiently.

Your nearest Mack branch or distributor is qualified by knowledge and experience to help you select the Mack best suited to your requirements. And when it comes to parts and service the Mack-trained mechanics and genuine Mack replacement parts found at your nearest Mack outlet can make a big difference in your truck's operation. Mack Trucks, Inc., Plainfield, New Jersey. Mack Trucks of Canada, Ltd., Toronto, Ontario.

MACK
FIRST NAME FOR
TRUCKS

MACK for over 8 straight years **NO. 1** by far in sales of diesel trucks

Mack B-80 Series

Payloads: Rear dumper, 12-16 cubic yards; Mixers, with up to 12 cubic yards agitating capacity (in six-wheel models . . . larger with special provision). **Engines:** 180, 205, 220 and 320 h.p. diesel; 232 h.p. gasoline.

Mack M Series

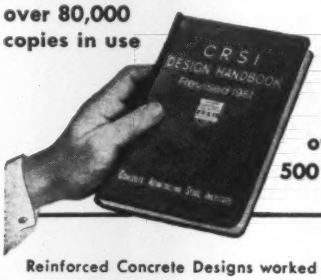
Payloads: Rear dumper, 15-, 18-, 25-, 30-, and 45-ton models for off-highway service. **Engines:** Diesel power up to 525 h.p. Choice of mechanical or torque converter transmissions.

PRINTED IN U. S. A. 8360

The QUICKEST way to get

Reinforced Concrete Designs | Revised 1961... Second Edition... Fourth Printing

over 80,000 copies in use



over 500 pages

Reinforced Concrete Designs worked out in accordance with the latest A. C. I. Building Code. Fourth printing includes new column design tables using special large-size bars, #14S and #18S, in 60,000 and 75,000 psi yield point steels, plus additional information on Waffle Slabs. Send check or money order.

Prepared by the Committee on Engineering Practice

$6.00 postpaid

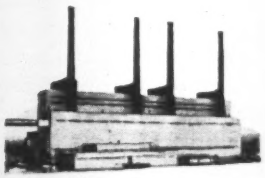
10-Day, Money Back Guarantee
NO C.O.D. ORDERS

CONCRETE REINFORCING STEEL INSTITUTE
38 S. Dearborn St. (Div. D), Chicago 3, Illinois

POSEY

STACKS

Guyed or self-supporting stacks in steel or wrought iron. Height and diameter to your specifications.



For FREE 16-page illustrated catalog on heavy steel plate fabrication, write:

POSEY IRON WORKS INC

Custom Fabrication For Over 50 Years

DIVISIONS:
• Iroquois Asphalt Plants • Mixers and Blenders
• Tunnel Forms • Industrial Heating • Foundry
• Large OD Steel pipe

561 S. PRINCE STREET LANCASTER, PA.

Men and Jobs

Business

Ernest C. Kobs, Jr. has been appointed a senior engineer and project administrator for Bernard Johnson and Associates, Dallas consulting engineers. He was professor of military science at Rice University.

John G. Marr has been appointed vice president of the Tudor Engineering Company of San Francisco.

William E. Cox has become a member of the architectural design staff of The Ballinger Company, Philadelphia architects and engineers. Formerly Mr Cox was a technical assistance expert with UNESCO in Turkey where he served as a design instructor at the Middle East Technical University in Ankara.

Donald M. Ditmars and **David W. Carmichael** have established a new firm of consulting engineers, Ditmars and Carmichael, with offices at 20 Nassau St., Princeton, N. J.

Operation of Marko Engineering Co. of Charlotte, N. C. has been taken over by Southern Engineering Co., also of that city, and will be headed by **Richard L. Johnson** who replaces **Marvin Koontz.**

Lucius E. Dixon has been elected a director of the Arundel Corporation of Baltimore. He has been vice president of the firm, in charge of West Coast operations, since 1941 and also president of L. E. Dixon Co. of San Gabriel, Calif. since 1930.

R. B. Jackson has become chief construction engineer of the Harza Engineering Co. of Chicago covering various world-wide projects. He was replaced by **E. V. Engstrom** as resident construction engineer for Wanapum Dam, Ephreta, Wash.

Robert T. Eakin was appointed vice president in the Engineering and Construction Division of Koppers Co., Inc., Cleveland, where he will be in charge of the company's interests in Venezuela.

John C. Sprague has opened a consulting practice in concrete technology at 104 Oakmont Drive, Marietta, Ga. Formerly associated with the Lock Joint Pipe Co. of East Orange, N. J., Mr. Sprague retired from the Army Corps of Engineers in 1960.

Charles L. Bretschneider has been named head of the Washington, D. C. office of National Engineering Science Co. where he will take charge of research programs in oceanography and hydrodynamics. Until recently Chief of the Oceanographic Branch, Research Division of the Corps of Engineers' Beach Erosion Board, he won the 1959 ASCE Research Prize for outstanding contribution to coastal engineering.

TRETOL DEKOTE CONCRETE FLOOR TREATMENT

1 APPLICATION:
{ CURES
HARDENS
SEALS
DUSTPROOFS

Apply DEKOTE to freshly troweled concrete floors by spraying, brushing, or by roller, and you get a floor that looks better, is stronger, will last longer and be easier to maintain.

DEKOTE, as a curing agent, retains 95% of the moisture in concrete to assure positive, complete hydration for maximum strength and hardness. It effectively seals concrete surfaces against most acids, oils, greases, and other foreign materials. Objectionable dusting, usually found in untreated concrete is eliminated.

Paints and tile adhesives may be applied to DEKOTE-treated floors without removing the DEKOTE membrane.

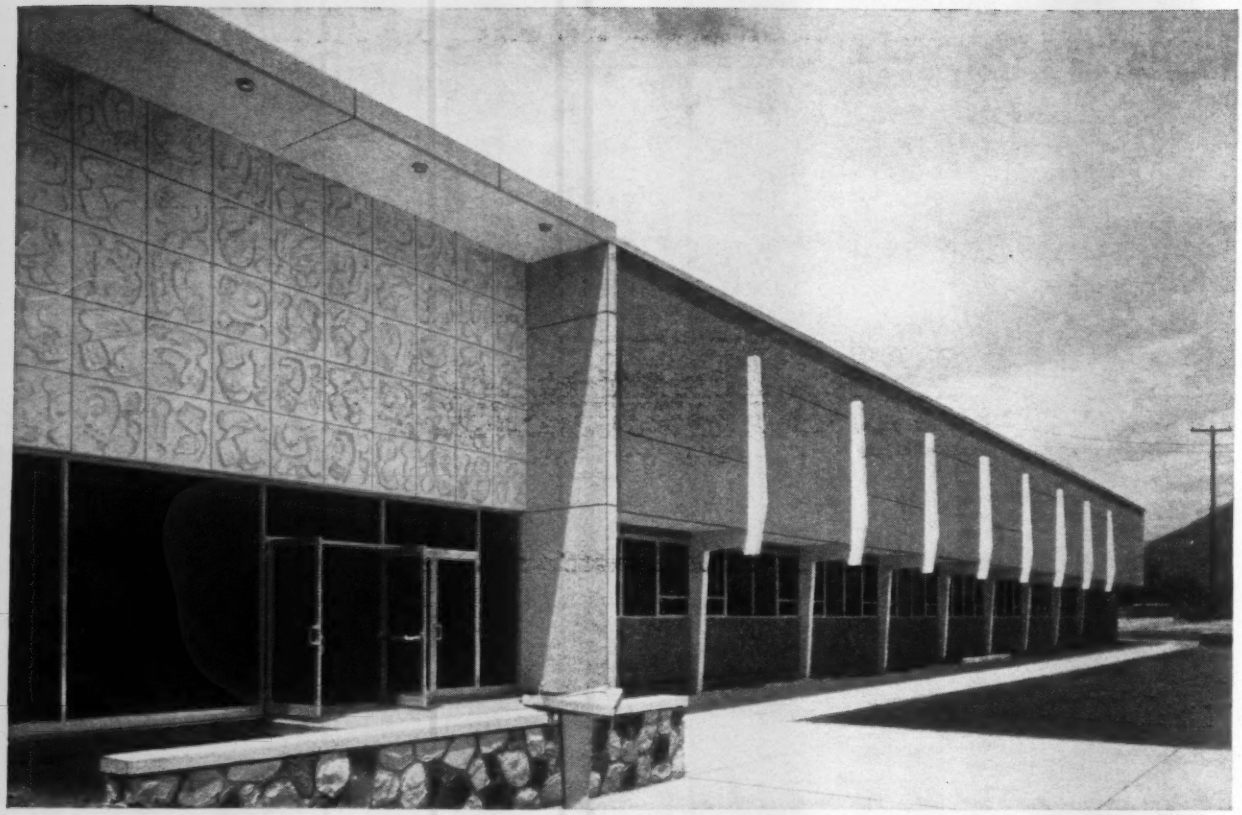
DEKOTE is a clear, fast-drying material that imparts a smooth, natural lustre to concrete that makes it easy to maintain and clean.

For complete information and specifications on this new concrete floor treatment, write for DEKOTE T 130 Catalog Sheet.

TRETOL INC.

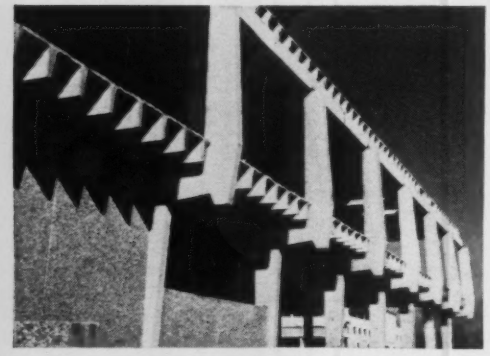
Quality Products for Concrete and Masonry

6051 W. 65TH ST., CHICAGO 38, ILLINOIS
Subsidiary of SERVICISED PRODUCTS CORP.



General Purpose Addition to the Central Utah Vocational School, Provo, Utah. Architects: Dixon, Knell & Long, Provo, Utah. Engineer: Hugh McKellar, Provo, Utah.

Fire safety came first – economy's a bonus in this low-cost, all-concrete school



Stepped columns support the prestressed concrete frame. Offset provides extra 4 feet of classroom space on second floor and built-in sunshade over first floor windows.

Fire protection is a vital consideration when building a school. This was one reason the architects chose all-concrete construction for the new General Purpose Addition to the Central Utah Vocational School at Provo.

And use of concrete in its newest forms gave opportunity for economy, too. The entire shell of the building, including prestressed concrete roof, frame and floor beams, precast columns and curtain wall panels, was completed for $3.21 per sq. ft.

All this and beauty, too. The warm texture of the exposed aggregate panels contrasts with the clean lines of the unusual stepped columns. Panels are "sandwich" type. No additional finishing is needed for interior surfaces. Over the entrance, small panels cast with plaster forms depict tools of industry.

More and more engineers are finding that concrete offers opportunity for money-saving construction.

PORTLAND CEMENT ASSOCIATION

A national organization to improve and extend the uses of concrete

FOR STRUCTURES... MODERN **concrete**

Work Was So Defective It Had No Value

A homeowner does not have to pay for work having no fair value and may recover payments already made

A contractor is not entitled to any compensation where the work performed is defective and is of no use to the owner.

In a New Jersey case, for example, a painter sued a homeowner for the reasonable value of the work he had done in scraping and painting a house under a contract. The owner had refused to let him complete the job.

The owner filed a counterclaim asking for a return of the payment made. He claimed the work that had been performed was defective and of no value to him.

The evidence showed that the old paint had not been scrapped properly and that the new paint peeled as applied.

The court dismissed the action and granted the householder judgment on the counterclaim. The judgment was affirmed on appeal.[1]

The trial court found that a small part of the work was satisfactory for which an allowance was made as a credit against the award on the counterclaim. The appellate court stated: "On the foregoing showing it is elementary that plaintiff was not entitled to recover the fair value of the work done, for which he was suing, since the work he did had no value to the defendant. See 98 C.J.S., Work & Labor, Section 33, page 766. The evidence and the findings indicate that a substantial part of the house needs to be rescrapped, which would require priming most of the house."

The painter contended that the householder, as a condition precedent to the right of the owner to interpose its counterclaim, should have given notice of the breach of contract which it failed to do. As to this contention the appellate court stated: ". . . defendant's (householder's) silence as to the reason for not letting plaintiff proceed with the second coat will be found to have no legal materiality under the applicable rules of law.

"Plaintiff (painter) cites no authority, and we know of none, which, absent an express provision in the contract, see 3 Corbin on Contracts (1951), sec. 727, p. 832, would require the aggrieved party to a contract substantially breached by the other contracting party to give notice of the breach before bringing action for damages. Rather does the law appear to be the contrary. Restatement, Contracts, sec. 304; Trimble v. J.T. Dotson & Son, 258 Ky. 472, 80 S.W. 2d 551 (Ct. App. 1935). Nor is there any authority that such notice is required to be given as a condition precedent for a defense against an action on *quantum meruit* where the facts are that the plaintiff rendered no services of value to the defendant.

"The defective performance by the plaintiff in regard to a vital part of the stipulated contract performance, and his failure to perform his promise to defendant to remedy the defects, constitute, in effect, a repudiation by the plaintiff of his obligation under the contract and justified the defendant in treating the contract as terminated, declining further performance on his part, and instituting an action to make himself whole. See O'Neill v. Supreme Council American Legion of Honor, 70 N.J.L. 410, 57 A. 463 (Sup. Ct. 1904)."

The court further stated: "Upon the wrongful repudiation by one party of his contractual obligation to the other, the injured party may elect to rescind the agreement either by bringing an action for appropriate relief incompatible with the continued existence of the contract, or by action having that import or notification to the wrongdoer of the rescission. See Levy v. Massachusetts Accident Co., 124 N.J. Eq. 420, 2 A. 2d 341 (Ch. 1938); S.S. Thompson & Co. v. Atlantic County, 106 N.J.L. 355, 148 A. 626 (E. & A. 1928); Giumarra v. Harrington Heights, Inc., 33 N.J. Super. 178, 190, 109 A. 2d 695 (App. Div. 1954), affirmed 18 N.J. 548, 114 A. 2d 720 (1955).

"Defendant's counterclaim here was, in effect, for restitution. This is always an available remedy when the wrongdoer's breach of contract is so serious as to properly be regarded as total. 5 Corbin on Contracts, (1951), sec. 1104, page 461. Under the trial findings here plaintiff's default was clearly of that character and the counterclaim was therefore properly allowed."

(1) Friedlander v. Gross, 164 A. 2d 761, Superior Court of New Jersey, Appellate Division, October 28, 1960

Owner's Promise Was Enforced

If an owner agrees to pay a materialman in return for a promise not to file a mechanic's lien, the owner's promise can be enforced.

The enforceability of an owner's agreement to pay a debt owed by a general contractor to a subcontractor is discussed in a recent Maryland case.

The case arose during performance of a contract for the erection of a prefabricated house. During the course of the work, the general contractor ordered from Frederick Trading Co. a number of kitchen cabinets to be installed in the house.

The contractor became financially embarrassed. Various materialmen, including Frederick, made demand on the owner for the cost of the material they had furnished, stating that if she would not pay they would file mechanic's liens. Frederick's lawyer personally served the owner with a notice of intention to file a mechanic's lien. The owner promised she would pay Frederick and other creditors if they would not file any lien.

Relying on her promise, Frederick installed the cabinets. Upon the refusal of the owner to pay for them, it brought an action against the owner and obtained a recovery which was affirmed on appeal.[1]

The appellate court stated: "It seems to have been long settled in Maryland that forebearance to institute legal proceedings, including the filing of a mechanics' lien, is good consideration for a promise by a third party to pay the debt of another." (Citing numerous cases).

(1) O'Niell v. Frederick Trading Co., 164 A. 2d 537, Court of Appeals of Maryland, October 20, 1960.

These summaries of court decisions are prepared by I. Vernon Werbin, Esq., New York attorney and licensed professional engineer, who is author of the following books published by McGraw-Hill Book Company, Inc.: *Legal Phases of Construction Contracts; Legal Guide for Contractors, Architects and Engineers;* and *Legal Cases for Contractors, Architects and Engineers.*

Want to sell the GREATER NEW YORK Construction Industry MARKET

Feature your services on products in the next edition of the "BLUE BOOK"... and reach the biggest section of the Construction industry.

CONTRACTORS REGISTER

Reaches 11,000 of the most important specification writers, buyers and selectors of CONTRACTORS, SUB-CONTRACTORS, MATERIALS and EQUIPMENT.

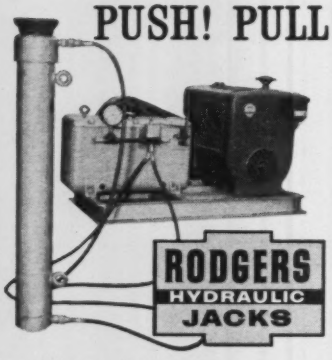
COST FOR ENTIRE YEAR

Full Page $300.00 ¼ Page . . 110.00
½ Page . . 185.00 ⅛ Page . . 70.00

Call or Write

CONTRACTORS REGISTER
60 E. 42nd St., New York 17, N. Y.
MUrray Hill 2-6598

LIFT! PRESS! PUSH! PULL!



You'll find RODGERS Hydraulic Jacks on nearly every construction project because of their easy adaptability to any heavy lifting, pulling, or pushing job. Use RODGERS jacking cylinders singly or in groups. You'll get steady, precisely-controlled power to jack steel casing, corrugated pipe, or compressed concrete tile. And you can use them to raise bridges, lift buildings, prestress concrete. *Available for immediate delivery*, with cylinder capacities of 50 to 600 tons, hand operated or power driven. *Get full details.*

J-100D

RODGERS HYDRAULIC, INC.

Pioneer in high-pressure Hydraulics, since 1932
7401 Walker St. • Minneapolis 26, Minnesota

First stage excavation takes 53% of . . .

Washington Lock and Dam Costs

This $2,664,600 Corps of Engineers' contract for river diversion excavation, cofferdam, Northern Pacific Railroad shoofly, and north abutment starts the ball rolling on the Lower Monumental Lock and Dam Project, Snake River, Wash. The low bidder, a joint venture of Henry J. Kaiser Co. and Puget Sound Bridge & Dry Dock Co., Oakland, Calif., took the award 3.5% under the second low combine of Morrison-Knudsen Co., Inc. and Le Boeuf & Dougherty Contr. Co., Inc., Seattle, 32% under the high of eight bidders, and 2.5% below estimate.

About 3,000,000 cu yd of common excavation has to be moved as step one towards construction of the hydroelectric and navigation facility. Excavation prices among the three low bidders ranged from $0.50 to $0.57 for 1,100,000 cu yd for the north shore abutment, from $0.50 to $0.68 a unit for 1,520,000 cu yd for the diversion channel, and from $0.36 to $0.58 for 266,000 yards for the shoofly.

The cofferdam will enclose the area where the navigation lock, spillway and south shore fish passing facilities will be constructed, while the railroad shoofly is required to secure necessary river diversion area. The present line is too close to the river. Since the shoofly will pass over the north earth-abutment embankment, the abutment has been included in this contract to make a second shoofly unnecessary.

Vicinity housing in the area of the dam is nonexistent. Present schedule for letting remaining contracts is January, 1962.

Base wage rates in the Seattle area include: common labor, $3.00/hr; carpenters, $3.53; structural iron workers, $3.92; power crane and shovel operators (½ and ¾ cu yd), $4.28.

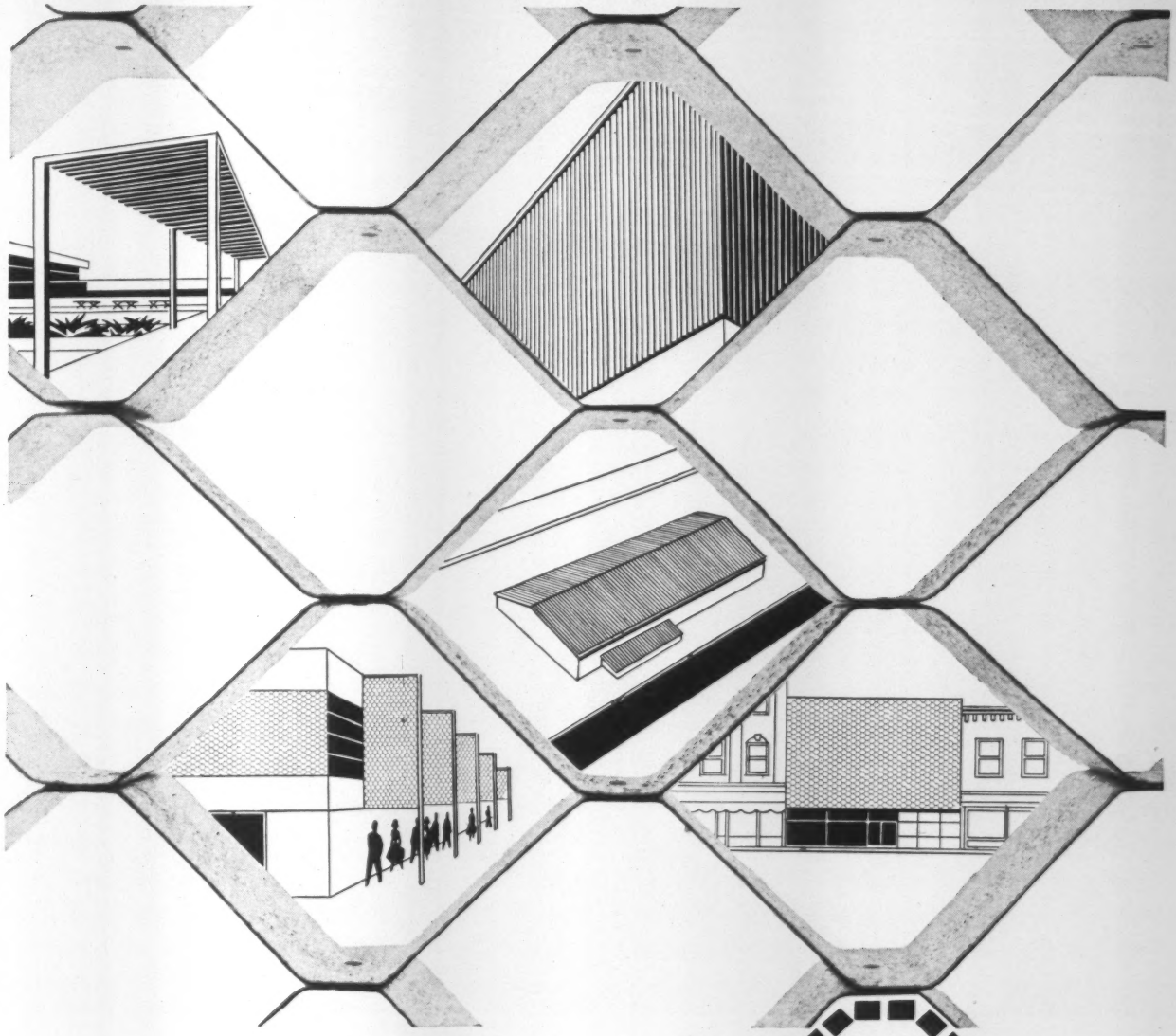
The bidding included:

1C	Henry J. Kaiser Co., and Puget Sound Bridge & Dry Dock Co., Oakland, Calif	$2,664,600
2	Morrison-Knudsen Co., Inc., and LeBoeuf & Dougherty Contr. Co., Inc., Seattle, Wash.	2,762,360
8	Fred H. Slate Co., Oregon Ltd., and E. C. Hall Const. Co., Portland, Ore	3,888,440
EE	Corps of Engineers, Walla Walla, Wash	2,732,493

Bids: 6-1-61 Items	Unit	Quantity	Unit Prices 1C	2
Cofferdam & Fishway				
Piling, trans & stockpile*	t	3,460	$10.00	$10.60
sheet, place, straight web sect	t	2,560	63.65	90.00
special sect	t	280	63.65	90.00
Piles, pull & redrive	ea	10	77.70	100.00
Fishway str	ls	job	21,270	26,500
Log boom	ls	job	1,096	3,300
Sand-cmt bags, 1st 12,000	ea	12,000	1.77	2.10
over 12,000	ea	4,000	1.77	2.00
Fill, gravel, cell	cy	65,000	0.24	0.40
Rock cap, cell	cy	6,300	1.54	2.50
Fishway, 12" rock	cy	60	15.85	33.00
grout	sf	160	3.75	2.65
Fill, rock, embankment	cy	52,600	1.25	1.75
imperv gravel, embankment	cy	147,200	0.78	0.86
Filter, gravel, embankment	cy	13,500	2.49	3.50
sand, embankment	cy	13,500	2.49	3.50
Pumping, facility, f&i 25,000 gpm	ls	job	27,070	64,767
unit, add 5,000 gpm	ea	3	3,219	1,000
Unwatering, cofferdam encl, ititial	day	15	308.00	1,000
add	day	15	308.00	350.00
after 1st add	day	30	308.00	350.00
North Shore Drilling & Grouting				
Mobilization & demobilization	ls	job	2,800	7,500
Drilling, grout holes	lf	4,250	3.94	4.25
Port cmt, in grout	bag	1,700	2.00	3.50
Fluidifier, in grout	lb	850	0.30	0.25
Grout, placing	cf	1,700	3.94	5.25
Connectns, to grout holes	ea	450	5.00	5.00
North Shore Abutment				
Excavation	cy	1,100,000	0.57	0.56
Fill, impervious, tp A	cy	68,000	0.50	0.74
tp B	cy	24,000	0.50	3.00
gravel	cy	506,000	0.28	0.03
Filter, gravel	cy	8,000	2.49	2.80
sand	cy	20,000	2.49	2.80
sand & gravel	cy	42,000	2.50	2.50
Rolling, additional, 1st 10 hrs	hr	10	19.30	21.00
over 10 hrs	hr	100	18.00	20.00
Slurry, sand-cmt, 1st 10 bags	ea	10	4.70	29.00
over 10 bags	ea	100	4.70	16.00
Pumping facility, f&i & operate, initial 10,000 gpm	ls	job	15,755	12,000
add 2,500 gpm	ea	4	5,103	500.00
Diversion Channel				
Excavation	cy	1,520,000	0.50	0.50
Railway Shoofly				
Trans, rail*	t	160	13.00	12.00
joint bars & tie plates*	t	36	13.00	12.00
rail anchors*	ea	2,100	0.03	0.05
Stockpile, rail*	t	50	4.00	1.70
joint bars & tie plates*	t	11	5.00	2.00
rail anchors*	ea	620	0.05	0.05
Furn & stockpile, compromise joints	pr	4	206.00	65.00
track spikes	cwt	33	20.00	18.00
track bolts, nuts, spring washers	cwt	10	60.00	65.00
ties	ea	690	7.00	5.50
ballast	cy	830	3.50	3.00
Excavation	cy	266,000	0.54	0.36
CMP, 14ga, 24"	lf	160	16.20	12.00
10ga, 36"	lf	110	30.00	20.00
Shoofly, ballast	cy	1,650	4.20	3.60
trackage	sta	32.7	900.00	750.00
Trackage, remove exist	sta	29.6	280.00	150.00
trans & stockpile	t	110	12.00	12.00
Fencing				
Fencing, work area	rod	1,000	15.00	5.00
Water Well				
Mobilization & demobilization of drill & test equip	ls	job	2,000	7,500
Drill, overburden	lf	100	32.00	65.00
bedrock	lf	200	32.00	60.00
Well casing & liner	lb	10,000	0.26	0.35
Surface seal	ls	job	250.00	180.00
Well screen	lf	50	30.00	55.00
Riser, tail pipe, ftg	ls	job	400.00	1,300
Perforation of casing	hr	20	16.00	18.00
Well, development	hr	24	17.00	18.00
Pump, test, instl & remove	ea	2	500.00	300.00
Pumping test	hr	150	16.00	20.00
Standby charge, for rig equip, personnel	day	5	400.00	100.00
Well, pump, perm, f&i & test	ls	job	1,800	1,800
sterilization	ls	job	100.00	300.00

Completion date: 4/1/62

ENR Constr. Cost Index (1913=100) 20-cities avg.—850.38



Alcoa Aluminum V-Beam is style at a saving!

Roofing a plant. Covering walkways. Siding a warehouse. Creating a solar screen. You design it; Alcoa® V-Beam builds it *better* for *less* in the long run.

Simplify things by standardizing on this strong, low-cost, all-purpose sheet. It's lightweight, even in 30-ft lengths; easy to apply, fast. Save again on painting, fixing, replacing with rugged Alcoa V-Beam—handsome and long-lived despite corrosive industrial fumes, coastal atmospheres.

Available in stucco-embossed finish or 11 colors in lasting Alcoa Alumalure® finish. Specifications? See AIA File No. 12-C. Application help? Call your nearest Alcoa sales office, or clip and mail the coupon today.

Aluminum Company of America,
816-J Alcoa Bldg.,
Pittsburgh 19, Pa.

☐ Send more data on Alcoa V-Beam.

Name _____

Title _____

Company _____

Address _____

City _____

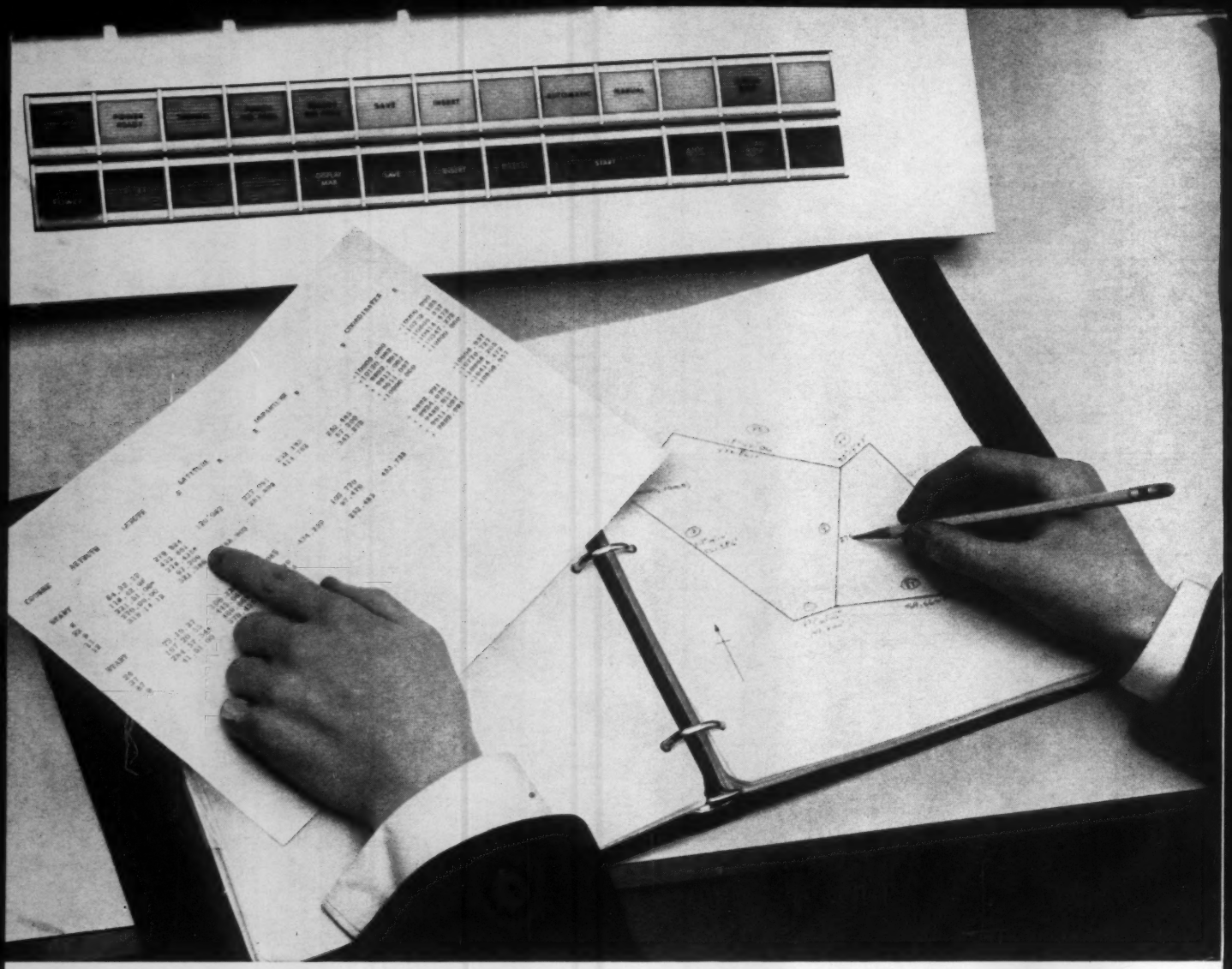
Zone _____

State _____

ALCOA ALUMINUM

ALUMINUM COMPANY OF AMERICA

For exciting drama watch "Alcoa Presents" every Tuesday evening—ABC-TV



A time-saving package for the subdivision engineer... the IBM 1620 traverse closure and curve data program

It calculates a seven-sided traverse in less than *one minute* from the time you put the paper tape in until the typewriter prints out the solution. Users of the 1620 Data Processing System can have this new program free-of-charge.

The program actually consists of two programs—*traverse closure program* and a *lot and general curve data program* incorporating the same subroutines. The traverse program will accommodate thirty-sided traverses. It will automatically select the proper method of computing the missing bearing(s) and distance(s) from among the five possible end solutions. For each course it prints out the course number, bearing, distance, end coordinates, and the traverse area in square feet and acres.

The program is flexible—you may use typewriter or paper tape input—you can decide whether the program is to report bearing and angles in tenths of seconds or seconds.

And, you'll find that the 1620 is easy to use, fast and powerful. It's the most outstanding engineering and scientific computer in its price range. A basic installation rents for just $1600 a month.

To learn how the 1620 can free you for more creative engineering work, call your local IBM Representative.

IBM's 1620 is a compact desk-size computer.

IBM®
DATA PROCESSING

Materials Prices

Monthly Market Quotations By ENR Field Reporters

See following ENR issues for OTHER PRICES:

- Wood Products, Glass, Explosives, Chemicals: Last, Aug. 24; Next, Sep. 21.
- Clay Products, Lime, Plaster, Paint, Roofing: Last, Aug. 31; Next, Sep. 28.
- Wage Rates, Building Board, Lath, Insulation: Last, Aug. 31; Next, Sept. 28.
- Cement Aggregate, Ready Mixed Concrete Asphalt: Last, Sep. 7; Next, Oct. 5.

Iron and Steel Products–F. O. B. Warehouse, Per 100 lbs., Base Price

Item	Unit	Atlanta W	Baltimore	Birmingham	Boston	Chicago	Cincinnati	Cleveland	Dallas	Denver	Detroit	Kansas City	Los Angeles##	Minneapolis	New Orleans	New York	Philadelphia	Pittsburgh	St. Louis	San Francisco	Seattle	Montreal	Toronto
Struct. shapes	Cwt	$7.52–8.15sV	$9.70	$9.00ty	$8.00–9 30KzsV	$7.07–8.34ysV	$7.64–8.9;styV	$7.46–8.73tysV	$7.51–9.18MsV	$8.24cK	$7.64–8.91MsV	$9.90sT	$8.70–10.45ktsV	$7.78–8.17ysV	.....	$7.85–9,13Vzs	$7.35–8.40zsV	$7.07–8.34syV	$7.30–8.57stxyV	$9.40–11.25zsV	$8.60–10.80aDsV	$7.90–8.60CF/8.20–8.90AiF	$9.20H
Reinf. bars, new steel	"	7.57	9.00T	6 81syV	8.75t	6.30–6.50guV	8.21t#	6.70ct	8.50	9.35	7.37	8.21N	7.35frt	9.26T	$8.00gktz	8.60ty	7.93uy	7.35y	7.35#txQ	8.25jS	9.00DM	7.00/7.50FGi	7.60
Reinf. bars, rail steel	"	.....	.....	6.81syV	8.75t	6.30–6.50guV	.....	.....	8.50	.....	11.85	.....	.....	9.26T	.....	8.60y	9.30y	.....	7.35#txyQ	.....	.....	7.00/7.50FGi	7.60
Expanded metal lath & std. diamond mesh, 3.4 lb	"	43.50	44.50	61.00pK	47.00K	52.00#U	44.50Kg	42.50KL	44.50u	58.00n	67.00 O	51.00	55.00S	42.50K	64.50K	50.00n	45.50#U	58.50#rw	64.00wxK	53.00S	67.00#nD	65.700h	49.50qI
std. ribbed, 3.4 lb	"	48.00S	49.00	67.00pK	51.00K	63.00#U	48.50mnKg	46.50KL	49.00w	56.35n	74.00 O	55.00	64.00S	46.50K	61.00K	58.00no	50.00#U	64.50#rw	65.00wxK	58.00S	73.50#nD	70.20h	44.85qI

Reinforcing Bar Extras, per cwt, N. Y.—• Quantity (applies to LCL shipments only): under 1,000#, +$1.80; 1000–1999# +$1.50; 2000–4999#, +$1.20; 5000–9999#, +90¢; 10,000–19,999#, +60¢; 20,000–29,999#, +30¢; 30,000–39,999#, +10¢; 40,000# & up, none. • Size†: #2 +$2.50; #3 +$1.40; #4 +$1.00; #5 +70¢; #7, #8, #9, #10, #11 +50¢ • Bending: heavy, +90¢; light +$2.20 (except in New York City and surrounding metropolitan area where bending must be done on the job). • Engineering (details and placing from designs by others): over 500 tons, +45¢; 200–499 tons, +50¢ but not over $4500; 75–199 tons, +65¢ but not over $2000; 20–74 tons, +75¢ but not over $975; 5–19 tons, +85¢ but not over $300; under 5 tons, +$1.00 but not over $85. Min. charge $25. Design only: +60¢.

Structural Shape Extras, per cwt, Chicago, Cincinnati, Cleveland, Dallas, Detroit, New York, Philadelphia, St. Louis and Pittsburgh. Item; 10,000# and over, base, 5,000–9,999#, +10¢, 2,000–4,999#, +35¢, 1,000–1,999#, +85¢, 400–999#, +$1.75, 100–399#, +$1.75, under 100#, +$1.75. Order: 20,000# and over, base, 10,000–19,999, +25¢, 5,000–9,999, +65¢ 2,000–4,999, +$1.50, 1,000–1,999, +$2.50, 400–999, +$4.00, under 400, +$8.00. Item extras do not apply in Chicago, Cleveland, Cincinnati, Detroit and St. Louis. •‡ Delivered. •* Aver. of Canadian & American. •## add 4% sales tax. •a 2000–4999#. •b 10,000–19,999#, fob city. •c 20 tons or over. •d 10,000–29,999#. •e Intermediate struct'l. •f incl. delivery in free zone. •g CL. •h list price; dominion tax exempt; add provincial and municipal taxes. •i add provincial and municipal sales taxes. •j intermediate and hard grade. •k fob city. •l delivered; contractor to do unloading. •m copper alloy. •n LCL. •o asphalt coated. •p 500 sq yd. or more. •q 2.5 lb. •r less 2% disc. for cash. •s 10,000# item in 20,000# order. •t less ½% disc. 10 days. •u add 10¢ switch. •v incl 15¢ del. •w truck lots. •x add 2% sales tax. •y add 15¢ del. •z add 10¢ del. •A American made. •C Canadian made. •D ½% for cash. •E 30,000# or over. •F Federal tax exempt for bldgs. •G add 10¢ del. •H $8.85 without tariff charges. •I 3 lb $60.00. •J 4 lb $47.50. •K less 2% disc. 10 days. •L F.o.b. Youngstown plant. •M 5,900–9,999#. •N 2,000–19,999#. •O 100 sy lots. •Q 5 tons to CL. •R revised. •S less 2% disc. 10th. •T less ½% disc 10th of mo. •U less 2% disc. 10 days. •V varies according to type and size. •W add 3% sales tax

Iron and Steel Products–Base Mill Prices Carlot Quantities

Item	Unit	Birmingham area	Chicago area	Pittsburgh	Buffalo area	Cleveland	Youngstown area	Geneva	Los Angeles	Pueblo
Struct. Shapes	cwt	$5.50	$5.50	$5.50	$5.50	.....	.....	$5.50	$6.20	.....
Plate Carbon Steel	"	5.30	5.30	5.30	5.30	.....	.....	5.30	.....	.....
Reinf. Bars (billet)*	"	5.675	5.675	5.675	5.675	$5.675	$5.675	.....	6.375	.....
Rivets, ½" struct	"	12.25	12.25	12.25	12.25	12.25	.....	.....	.....	.....
Sheet Piling (base)	"	.....	6.50	6.50	6.50	6.50	.....	.....	6.50	.....
Steel Rails, standard	Ton	110.50	110.50	110.50	110.50	.....	.....	.....	.....	.....
light	"	130.00	130.00	130.00	130.00	.....	.....	.....	.....	.....
Track Supplies										
Angle bars	cwt	6.975	6.975	6.975	6.975	.....	.....	.....	.....	$6.975
Std. spikes	"	9.75	9.75	9.75	9.75	.....	9.75	.....	9.75	9.75
Tie plates	"	6.60	6.60	6.60	6.60	.....	.....	.....	6.875	6.60
Track bolts	"	.....	.....	14.75	14.75	14.75	.....	.....	.....	.....

* Fairless Works, $5.825 Revised. These prices are nominal. Major reinforcing bar producers now quote prices on the basis of individual inquiries.

***WROUGHT STEEL PIPE** (Full standard weight) Discount from list; see footnote

Mill	2½ & 3 in.,* Black %	2½ & 3 in.,* Galv. %	3½ to 6 in.,* Black %	3½ to 6 in.,* Galv. %
Lorain, Ohio	13.75	+3.50	+1.75f	+19.50f
Aliquippa, Pa.	13.75	+3.50	3.25a	+14.50a
Sparrows Pt., Md.	17.25	+List	.....	.....
Benwood, W. Va.	13.75	+3.50	.....	.....
Youngstown, O.	13.75	+3.50	3.25	+14.50a
Indiana Harbor, Ind.	12.75	+4.50	2.25ab	+15.50a
Sharon, Pa.	13.75	+2.50	3.25ab	+13.50ab
Wheatland, Pa.	13.75	+3.50	3.25a	+14.50a
Etna, Pa.	13.75	+3.50	50de	.....
Fontana, Calif.	0.75	+16.50b	+9.75ab	+27.50ab

* Threaded and coupled: a 3½ to 4 in. b to 1, 5 and 6 in. c 6 in. d Seamless 5 in.

WROUGHT STEEL PIPE, butt or continuous weld: Deduct (+) or add (−) these "discounts" from or to the following carlot list prices to get mill prices. Price per ft. (based on approx. $200 per net ton): 2½ in., 58½¢; 3 in., 78½¢; 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Add freight for destination price.

WROUGHT IRON PIPE, lap weld: List prices per ft. same as for wrought steel pipe, but add these "discounts" to get Pittsburgh mill price. 2½ to 3 in., black 106%; galv. 139%; 4 to 6 in., black 103%; galv. 133%. Add freight for destination price.

WELDED FABRIC REINFORCING, FOB Joliet, Ill., Donora, Pa., Monessen, Pa. mill, per 100 sq. ft.: 4 x 18 in., No. 5 & 10 wires....$7.04; 4 x 12 in., No. 8 & 12 wires....$2.62; 6 x 8 in., No. 6 & 6 wires....$4.17

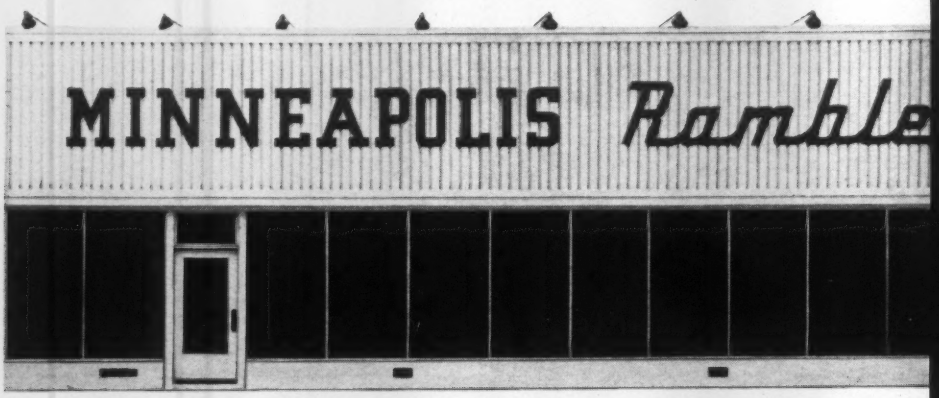
Plumbing, Heating, Water, Sewer Pipe and Tubing

Item	Unit	Atlanta W	Baltimore	Birmingham	Boston	Chicago	Cincinnati	Cleveland	Dallas	Denver	Detroit	Kansas City	Los Angeles##	Minneapolis	New Orleans	New York	Philadelphia	Pittsburgh	St. Louis	San Francisco	Seattle	Montrea l	Toronto
C. I. Pipe Price Index	a	130.6	140.2	125.8	143.2	140.0	135.6	141.8	137.9	145.1	142.1	138.6	148.6	145.0	132.4	138.6	137.9	142.9	135.7	148.6	149.0	.....	.....
Asbest. Cem. Pipe, 6"	lin. ft.	$1.51	$1.51	$1.51	$1.51	$1.51	$1.63	$1.63	$1.59	$1.59	$1.51	$1.51	$1.59	$1.51	$1.51	$1.51	$1.51	$1.51	$1.48	$1.59	$1.59	.....	.....
Asbest. Cem. Pipe, 12"	" "	2.36	2.19	2.26	2.19	2.19	2.19	2.19	2.26	2.36	2.19	2.26	2.19	2.26	2.26	2.19	2.19	2.19	2.26	2.19	2.19	.....	.....
Clay Sewer Pipe																							
8 in. ASTMC 13–55	ft.#	0.546rn	0.665	0.50r	0.84qrtL	0.93rm	0.595	0.66BCN	0.575#B	0.56nr	0.97nk	0.641r	0.86bl	1.05oB	0.566r	0.94	0.75	0.94K	0.62r	0.86#d	0.91bk	1.13u	0.76F
12 in. " "	"	1.04rn	1.20	0.95r	1.55qrtL	1.78rm	1.15	1.27tBC	1.09#B	1.00nr	1.86nk	1.148r	1.86blS	1.90oB	1.078r	1.76	1.44#	2.01K	1.23r	1.86#d	1.94kb	2.00u	1.43F
24 in. ASTMC 200-55T	"	4.49rn	3.05	4.14rw	6.39qrtM	7.52rm	4.95	8.47tBC	4.75#B	4.98r	7.48nk	6.354br	7.55blS	8.00oB	5.65r	12.89	9.49#v	8.79K	5.10r	7.53#d	7.78k	7.00u	5.70F
36 in. " "	"	.....	12.71	13.50rw	.....	21.16rm	14.35	23.45tBC	10.53#bB	.....	19.95nk	.....	16.39blS	.....	.....	35.61	25 73#v	24.15K	12.95rS	18.00#d	.....	13.50u	.....
Clay Drain Tile 6 in. V	M ft.	200.00sr	187.80	295.00rx	244.00r	220.00Br	177.50	179.40mBC	.....	460.00nr	212.00mk	327.00r	410.00lS	.....	240.50pr	240.81	225.00#	190.00	170.00r	360.00#l	260.00ck	288.00	175.00F
8 in. V	M ft.	.....	289.20	430.00rx	348.60r	330.00Br	274.60	276.60mBC	.....	640.00nr	327.00mk	625.00r	590.00lS	.....	566.00	369.84	345.00#	295.00	300.00r	620.00#l	135.00	545.00	290.00F
Concrete Sewer Pipe, 12"	ft.#	0.95mKr	1.01	1.75rS	1.56S	1.30	0.85rA	1.35	1.27BD	1.05m	1.40k	1.68r	1.30vE	2.19DFH	1.50lR	1.50#B	2.00#h	1.66DB	1.75i	105.00#Q	1.90ky	1.17D	1.27F
24 in.	ft.#	3.75mKr	2.75	2.75rS	3.60S	4.00	3.25rA	2.40P	2.95BD	3.50m	5.23k	4.20r	3.85fvE	6.31DFH	4.15il	3.60#B	4.30#h	3.93DB	4.05	3.30#Q	4.50ky	3.11jpD	5.19F
Copper Water Tubing																							
3/8", Type L	ft.	0.1480	.....	0.1650	0.1420	0.1420	0.1420	0.1420	.....	0.1680	0.1588	0.1320	0.1620	0.1620	0.1680	0.1491	0.1620	0.1441	0.1420	0.1480	0.1450	0.2089U	0.3344UV
1/2", Type L	"	0.1670	.....	0.1840	0.1630	0.1630	0.1630	0.1630	.....	0.1900	0.2210	0.1480	0.1840	0.1840	0.1900	0.1712	0.1840	0.1900	0.1630	0.1670	0.1640	0.2450U	0.3485UV

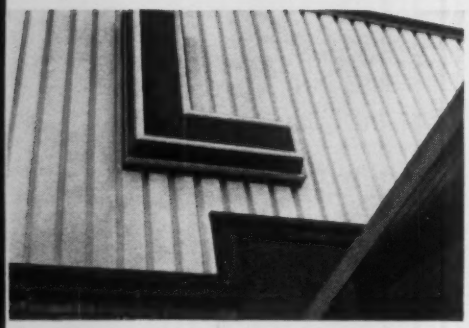
•† Extra quality. •‡ delivered. •## + 4% sales tax. •a PRICE INDEXES or CENTRIFUGAL CAST IRON PIPE (Include carload freight allowed to city). These also serve as the HISTORICAL RECORD of THE $ PER NET TON PRICE of CLASS B, B&S. PIT CAST IRON PIPE. F.O.B. Foundry Price Indexes Birmingham, Ala., 125.8; Burlington, N. J., 134.6. For explanation of index see ENR Sept. 29, 1955 page 139. •b Extra strength. •c 4-in., $130. •d SS361-A. •f 21 in. •g culvert pipe; reinf., ASTM C 75-56. •h reinf., ASTM C 75-54. •i reinf., ASTM C 76-55. •j centrispun. •k less 2% disc. for cash. •l fob plant. •m truck del. •n LCL del., fob truck. •p less 5% disc. 10th. •p freight allowed to destination in city. •u 35,000# minimum. •r less 2% disc. 10 days. •s 1 ft lengths. •u CSA A 60. •v standard strength. •w SS; add 20% for d.s. •x fob city. •y Reinforced. •z Upper value in range based on both truck lots and less than truck lots, fob city; lower value truck lots delivered. •A single strength. •B truckload. •C less 2% disc. 15th. •D ASTM 76–57. •E less 1% disc. 10 days. •F less 2% disc. 30 days. •G LCL. •H CL. •I fob origin, freight allowed. •J reinf. B14–15. •K Less 2% disc. 15 days. •L ASTM 13–57. •M ASTM 200–57. •N 2 ft lengths. Trucklots. •O add 2% Sales Tax. •P 18 in. •Q less 1% disc. 10th. •R revised. •S ASTMC 72, 12" 1.55, 24" 4.00. •T Second price transite pipe. •U Type K. •V including 11% sales tax, less 20% in lots under 6,000 ft. •W add 3% sales tax

GRANCO

ROOF DECK does much more than roof a building...

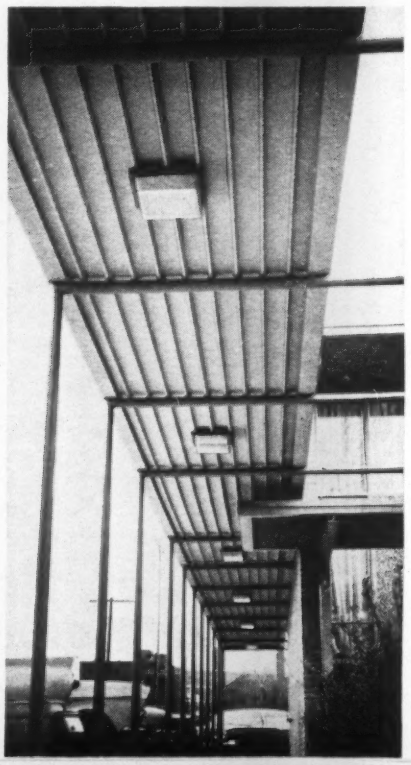


it's a crisp fascia or background for signs . . .

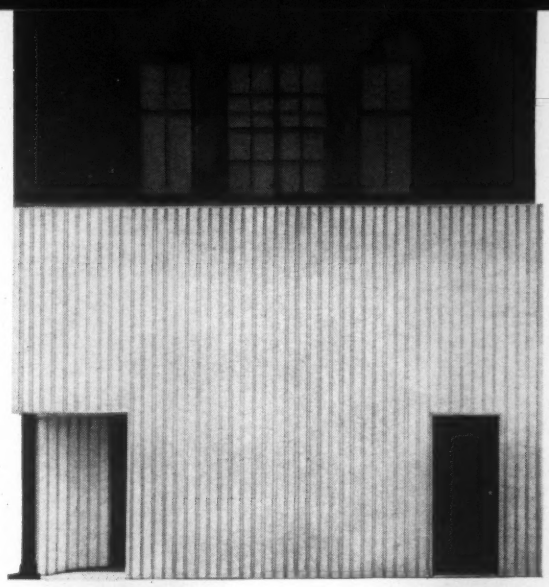


works well with a variety of building materials . . .

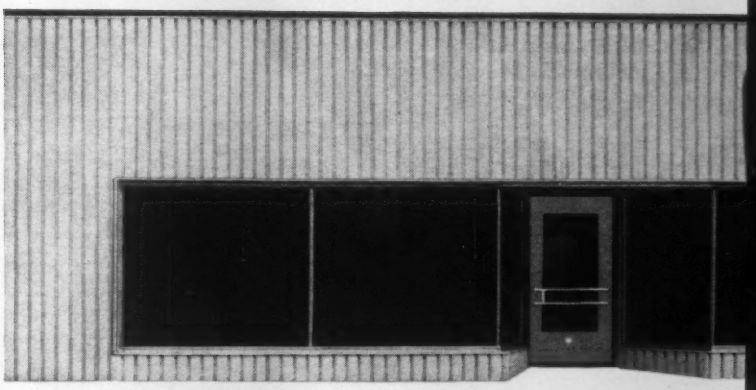
curve it or turn 90° corners . . .



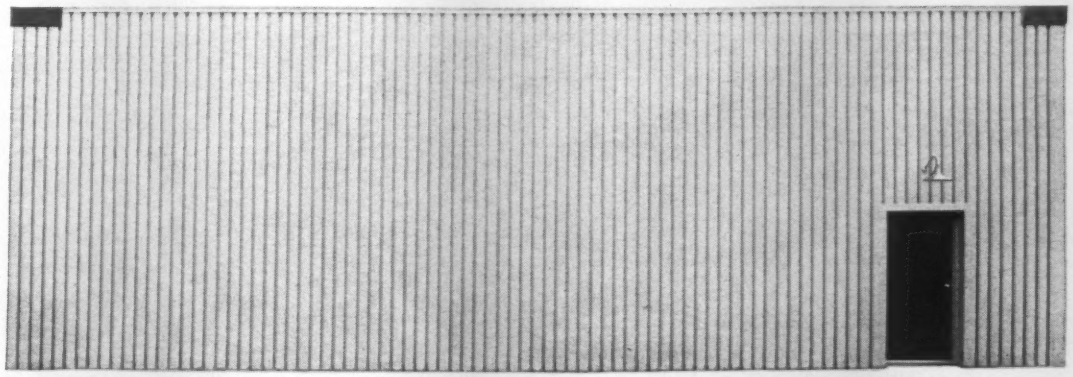
produces a clean, absolutely uniform texture for many design applications . . .



it refaces old buildings . . .



or finishes new store fronts . . .



or siding for a complete building . . .

Granco Roof Deck is widely used in commercial and industrial buildings. The tough finish, long sheets and uniform pattern make it one of the strongest, most economical roof systems available today. But that's just the beginning . . . more and more architects are finding it one of the most versatile and practical building materials. Granco Roof Deck becomes what *you* want it to be in modern building construction.

Granco Roof Deck satisfies function and appearance requirements in a wide variety of building applications because:

1. Wide rib openings speed application—make Granco Roof Deck easier to fasten, easier to paint for decorative purposes.
2. The flint-hard enamel finish resists scratches, prevents corrosion and requires little or no maintenance.

Granco Roof Deck is available in 22, 20 and 18 gage to meet a wide range of building requirements. For more information, see our catalog in Sweet's or write direct.

ROOF DECK

GRANCO®

TUFCOR® • CORRUFORM® • COFAR®
E/R COFAR® • ROOF DECK • VIN-COR
PAVEMENT JOINTS • GUARD RAIL
STAY-IN-PLACE BRIDGE FORMS

GRANCO STEEL PRODUCTS COMPANY
6506 N. Broadway, St. Louis 15, Missouri
A Subsidiary of GRANITE CITY STEEL COMPANY

Bid Asked—Low Bidders—Contracts Awarded—

NEW ENGLAND

BUILDINGS—BA

▲ **Mass., Woburn**—BA 9/21—City, Supt. P. Wks., City Hall, SENIOR HIGH SCHOOL ADDN. Approx. $3,500,000. Extended date. Edward J. Tedesco, 15 Pleasant St., archt. Cleverdon, Varney & Pike, 120 Tremont St., Boston, struct. engrs. CD 8/29/61.

▲ **Conn., Fairfield**—BA 10/6—Town, Purch. Auth., Town Hall, convert Mill Plain Elementary School into HIGH SCHOOL ADDN. $2,875,000. Plans deposit $100. Lyons & Mather, 211 State St., Bridgeport, archts. CD 2/23/61.

HEAVY CONSTRUCTION—LB & CA

▲ **CONNECTICUT**—State Hy. Comr., 170 Douglas St., Hartford, Bids opened 8/28, ROADS,

Oneglia and Gervasini Inc., Casson Ave., Torrington, Conn., LB **$5,335,381,** (6 bidders), Projs. 63-171, 63-166 and 159-92, 13.853 lin. ft. grading, drainage, paving, incl. 6 bridge structures, Interstate Rte. 91 and Rte. US 5, Hartford and Wethersfield. **(Correction**—Low Bid Price). CD 8/30/61, under LB.

BUILDINGS—LB & CA

▲ **Davison Constr. Co., Inc.,** 1306 A Elm St., Manchester, N. H., CA **$1,500,000,** SHOPPING CENTER, site of present R.R. Station, CONCORD, N. H. All State Realty Corp., 150 Causeway St., Boston, Mass. Harvery & Provost, 150 Causeway St., Boston, Mass., archts. CD 9/18/59.

▲ **Joseph Rugo, Inc.,** 115 Holmes Ave., Dorchester, Mass., CA **$5,195,665,** est. $5,129,565, Proj H-60-3, HOSPITAL, Lakeville State Sanitorium, LAKEVILLE, MASS. Commonwealth Mass., Dpt. P. Health, Div. Bldg. Constr., 38 Chauncy St., Boston, Mass. BA 7/21. CD 7/26/61, under LB.

▲ **Moylan Assoc.,** 343 Washington St., Braintree, Mass., Owner Builds, **$2,000,000** APARTMENTS, two sections, Pearl St., WOBURN, MASS. Edgar H. Wood & Assoc., Inc., 1050 Hancock St., Quincy, Mass., archt.

▲ **E. & F. Constr. Co.,** 94 Wells St., Bridgeport, Conn., LB **$1,484,000** (5 bidders), JEWISH COMMUNITY CENTER, incl. swimming pool, auditorium, Park Ave., BRIDGEPORT, CONN. Bridgeport Jewish Community Center, 360 State St., Bridgeport, Conn. BA 8/31/61. CD 8/1/61.

▲ **A. F. Peaslee, Inc.,** 37 Lewis St., Hartford, Conn., CA **$1,925,000,** JUNIOR HIGH SCHOOL, S. Elm St., WINDSOR LOCKS, CONN. Town, School Bldg. Comm., Church St., Windsor Locks, Conn. BA 8/10/61. CA 8/31/61. CD 8/14/61, under LB.

▲ **Atlas Builders,** Boston Post Road, Milford, Cons., Owner Builds, **$1,600,000,** 3 story, 200,000 sq. ft. STORE, Boston Post Road, Connecticut Post Shopping Center, MILFORD, CONN. Alexander's Department Store, Inc., New York, N. Y., lessee. Lathrop Douglass, 518 Fifth Ave., New York, N. Y., archt. Sidney W. Barbanel, 29-46 Northern Blvd., Long Island City, N. Y., engr. Robert E. Levien, 29-46 Northern Blvd., Long Island City, N. Y., struct. engr. CD 8/30/61.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—LB & CA

▲ **NEW YORK**—State Dpt. P. Wks., State Office Bldg., Albany, ROAD,

Lizza & Sons, Inc., 152 South St., Oyster Bay, N. Y., CA **$5,136,975** est. $6,811,000 c. conc. pavt. 3.45 mi., misc. work 0.35 mi. acc 3.34 mi. 8 H. G. S. comp I-beam, 1 sp 83.6 ft., 1 sp. 84.2 ft., 4 sps. 286.7 ft., total, 1 sp. 72.1 ft., 4 sps. 231.5 ft. total Long Island Expressway, Contr. 12 (Commack Rd. to Islip Ave.) FALIE 61-3, Proj. U-862(32), Suffolk Co. BA 7/27 CD 7/28/61 under LB.

▲ **NEW YORK**—State P. Wks., State Office Bldg., Albany, ROADS,

N. Y.—**Slattery Contg. Co., Inc.,** 46-36 54 Rd., Maspeth, N. Y., CA **$20,699,152,** 2.02 (7 acc.) mi. Interstate Rte. Conn. 515 Northern Blvd. Cont. 1 (Grand Central Parkway to Flushing River) Van Wyck Expressway Exten. (at Flushing River Interchange), Grand Central Parkway, FINB 61-1, FAVWE 61-2, FAGCP. 61-2, Queens Co.; CA **$11,729,879,** 0.8 mi. 1.33 acc. mi. Interstate Rte. connection 512 Gowanus Expressway Contr. 6, 3 Ave. at 53 St. to 4 Ave. at 65 St., Int. Trg. Rte. 278, FIGE 61-2, Kings Co.;

N. Y.—**Pinebrook Constr. Corp.,** 360 Lexington Ave., New York 17, N. Y., CA **$516,549,** 0.28 mi. South Glens Falls Village, Saratoga Ave. and Main St. SH 5598 City of Glens Falls; Glen St. Arterial Hy. (Hudson River to Oakland St.), R. C. 61-82 C. 61-13, Saratoga and Warren Counties. Grand total $32,945,580. BA 8/10. CD 8/15/61, under LB.

▲ **Vanbro Constr. Corp.,** 1900 South Ave., Castleton Corners, N. Y., LB **$3,141,132,** (2 bidders), Nicholas Ave. SEWER from U. S. bulkhead line to Hatfield Pl. and other Sts., Contr. 3, Section L, constr. COMBINED SEWER, Northfield ditch sewer easement from Blackford Ave. to north line of Dixon Ave. across Dixon Ave. to Van Riper St. and other streets, Richmond Boro, NEW YORK. President Richmond Boro, Boro Hall, St. George, N. Y. BA 9/1. CD 8/14/61.

▲ **Buckley & Co., Contrs.,** 1317 S. Juniper St., Phila., Pa., LB **$2,695,000,** (5 bidders), SUBWAY and SUBWAY TRANSPORTATION SYSTEM, connecting addnl. House Office Bldg. with U. S. Capitol, WASH., D. C. Office of Architect of Capitol, U. S. Capitol, Wash., D. C. BA 8/31/61. CD 8/22/61.

BUILDINGS—LB & CA

▲ **Wilaka Constr. Co. Inc.,** 11 E. 44 St., New York 17, N. Y., LB **$9,047,000** domestic steel LB **$9,041,000** foreign steel (8 bidders) fdns. and general constr. Tompkins HOUSES, Proj. NY5-47, Park Ave., Throop Ave., Myrtle and Tompkins Aves., Brooklyn Boro, BROOKLYN, N. Y. New York City Housing Auth., Rm. 312, 299 Broadway, New York 7, N. Y. BA 8/31 CD 8/24/61;

Afgo Engineernig Corp., 475 Adelphi St., Brooklyn 17, N. Y., LB **$996,382** (2 bidders) heating and ventilating Tompkins Houses (Brooklyn, N. Y.);

Herman H. Schwartz Inc., 97-11 Sutphin Blvd., Jamaica, N. Y., LB **$774,470,** (4 bidders), electric work Tompkins Houses (Brooklyn, N. Y.);

Lipsky & Rosenthal Inc., Madison Ave. and E. 112 St., New York 29, N. Y., LB **$1,179,000** (8 bidders) plumbing work Tompkins Houses (Brooklyn, N. Y.);

Watson Elevator Co. Inc., 625 W. 42 St., New York 36, N. Y., LB **$718,039** (6 bidders) elevators Tompkins Houses (Brooklyn, N. Y.).

▲ **D. Fortunato Inc.,** 110 Gericho Turnpike, Floral Park, N. Y., CA **$2,869,300** JUNIOR-SENIOR HIGH SCHOOL, LOCUST VALLEY, N. Y. Bd. Educ. Central School Dist. No. 8, Horse Hollow Rd., Locust Valley, N. Y. BA 8/3. CD 8/9/61 under LB.

▲ **John W. Rouse Constr. Corp.,** 8 Church St., Gouveneur, N. Y., LB **$1,248,248** two DORMITORIES Agriculture and Technical Institute, MORRISVILLE, N. Y. New York State Dormitory Auth., Normanskill Blvd., Elsmere, N. Y. BA 8/29. CD 8/23/61.

▲ **Edmund H. Cheval Inc.,** 492 Paramus Rd., Paramus, N. J., LB **$1,306,000,** (10 bidders), JUNIOR-SENIOR HIGH SCHOOL, EMERSON, N. J. Bd. Educ., Boro Emerson, Linewood Ave., Emerson, N. J. BA 8/31/61. CD 8/28/61.

▲ **Joseph P. Blitz Inc.,** 545 Madison Ave., New York 22, N. Y., CA **$2,583,000** general contr. Arthur H. Murphy HOUSES, Proj. No. NYS-108, Cross Bronx Expressway, Crotona Ave. and Crotona Park North, Bronx Boro, NEW YORK, N. Y. New York City Housing Auth., 299 Broadway, New York 7, N. Y. BA 7/18. CA 8/28. CD 7/20/61 under LB.

▲ **H R H Constr. Corp.,** 579 Fifth Ave., New York 17, N. Y., CA **$4,500,000,** 20 story APARTMENT and GARAGE, 1532-50 York Ave. between E. 81 and E. 82 Sts., NEW YORK, N. Y. York Hill Housing, Inc., 331 E. 70 St., New York 21, N. Y. CD 11/28/60.

▲ **Land-O-Pines Development Corp.,** Box 181, Roselle, N. J., Owner Builds. **$3,000,000,** 200 HOUSES, Tract E, adjoining Hay Stack Brook; **$200,000,** SEWER SYSTEM, Land-O-Pines Development, Howell, Twp., FARMINGDALE, N. J. CD 3/15/61.

▲ **New Brunswick Industrial Park,** 1441 Morris Ave., Union, N. J. Owner Builds. **$2,000,000.** PLANT, on Rte. 27, NEW BRUNSWICK, N. J. CD 8/24/61.

▲ **Philip J. Levin,** U. S. Hy. 22, North Plainfield, N. J. Owner Builds. **$10,000,000.** DEPARTMENT STORE, Spring Valley Road and Forest Ave., PARAMUS, N. J. Korvettes', lessee. Eugene De Martin, 483 Riverside Ave., Lyndhurst, N. J., archt.

▲ **B. R. T. Corporation,** 652a Sherman Ave., Elizabeth, N. J., Owner Builds, **$1,500,000,** 65 HOUSES, Harrison Ave., WEST CALDWELL, N. J. Stephen Potter, 410 Colonial Ave., Union, N. J., archt.

▲ **Elmer R. Hallstrom,** 518 Juniata St., Du Bois, Pa., CA **$1,205,000,** SECONDARY SCHOOL, Johnsonburg Area Jt. School Bd., Proj. No. A6-674, JOHNSONBURG, PA. Pa. Pub. School Bldg. Auth., 101 S. 25th St., Harrisburg, Pa. BA 7/13/61. CD 7/19/61 under LB.

▲ **Relocation Housing Corp.,** 1023 N. Calvert St., Baltimore 2, Md., Owner Builds, **$1,610,000,** 2 story, 24 unit brick masonry APARTMENT, Oaklawn Rd., Clifford Ave. and Carmine Ave., BALTIMORE, MD.

▲ **Ernest DiSabatino & Sons, Inc.,** 2601 W. 4th St., Wilmington, Del. LB **$3,324,000,** (3 bidders) Christiana HIGH SCHOOL, NEWARK, DEL. Newark Special School Dist., Bldg. Commission, Newark, Del. Ewald & Miller, 1737 Chestnut St., Philadelphia, Pa., engrs. BA 8/30/61. CD 8/9/61.

SOUTH

HEAVY CONSTRUCTION—BA

▲ **La., New Orleans**—BA 9/28—Orleans Levee Bd., Courthouse, 418 Royal St., DRAINAGE CANAL, SEWERS, DRAINS, WATER LINES, STREET PAVING, SIDEWALKS, GRADING, Lake Oaks Subdivision. $2,000,000. Plans deposit $15. CD 8/10/61.

▲† **Va., Williamsburg**—BA 10/5—Dist. P. Wks. Office, Fifth Naval Dist., Room 307, Bldg. N-26, U. S. Naval Station, Norfolk, Site III Facilities, ARMED FORCES EXPERIMENTAL TRAINING ACTIVITY, incl. six 1 and 2 story rein.-con. spread footing and fdn. walls, struc. steel framing etc., bldgs., Camp Peary, NBy-37141, Spec. No. 37141/61. Over $1,000,000. CD 8/9/61.

BUILDINGS—BA

▲ **Va., Hampton**—BA 9/28—City of Hampton School Bd., 19 Carey St., 1 story, 178,000 sq. ft. Chesapeake HIGH SCHOOL, air-conditioning. $2,000,000. Plans deposit $75. Oliver & Smith, 333 West Freemason St., Norfolk, Va., archts. Fraioli-Blum-Yesselman, 1214 Granby St., Norfolk, Va., engrs. CD 4/20/61.

▲ **Ga., Athens**—BA 10/11—Bd. Regents, University System of Georgia, 244 Washington St. SW, Atlanta, AGRICULTURAL-ATHLETIC COLISEUM at University of Georgia, $3,000,000. Plans deposit $100. Cooper, Barrett, Skinner, Woodbury & Cooper, Inc., Henry Grady Bldg., Atlanta, archt. CD 5/17/61.

HEAVY CONSTRUCTION—LB & CA

▲ **Ames & Webb, Inc.** and **E. V. Williams Co., Inc.,** P.O. Box 7051, Norfolk, Va., CA **$1,241,648,** (1 bidder), Contract 3, Second Elizabeth River Tunnel, PAVING, GRADE SEPARATION, INTERCHANGE, Norfolk, VIRGINIA. Elizabeth River Tunnel Comn., Berkley Plaza, Norfolk, Va. BA 8/29/61. CA 8/29/61. CD 8/11/61.

▲ **American Bridge, Div. U. S. Steel Corp.,** 1375 Peachtree St., Atlanta, Ga., CA **$1,587,000,** STRUCTURAL STEEL JET OVERHAUL FACILITIES, Miami International Airport, MIAMI, FLA. Dade County Port Authority, 10th Floor Courthouse, Miami, Fla. Eastern Air Lines, lessee. BA 8/1/61. CD 8/7/61, under LB;

▲ **Louisville & Nashville Railroad Co.,** 9th and Broadway, Louisville, Ky., Owner Builds, **$2,500,000,** RAILROAD SPUR TRACKS to Bowaters Paper Corp. Mill, Calhoun, TENNESSEE.

BUILDINGS—LB & CA

▲ **Peacock Constr. Co.,** 1240 Greene St., Augusta, Ga., LB **$1,748,944,** PHARMACY BLDG., University of Georgia, ATHENS, GA. Bd. Regents University System of Georgia, 244 Washington St. S.W., Atlanta, Ga. BA 8/31/61. CD 7/31/61.

▲ **The Braveco Co.,** 3204 Glenwood Rd., Decatur, Ga., Owner Builds, **$2,200,000,** 150 RESIDENCES, Idlewood Acres subdivision, DECATUR, GA.

▲ **Beers Constr. Co.,** 70 Ellis St. N.E., Atlanta, Ga., CA **$2,248,130,** 150 beds, 100,000 sq. ft. South Fulton HOSPITAL, EAST POINT, GA. South Fulton Hospital Auth., 114 East Point St., East Point, Ga. BA 8/16/61. CD 8/22/61, under LB.

▲ **Hauser Constr. Co.,** 4421 S.W. 1st St., Fort Lauderdale, Fla., LB **$1,287,000,** JUNIOR-SENIOR HIGH SCHOOL, TITUSVILLE, FLA. Brevard Co. Bd. Public Instruction, U. S. Hy. 1, Titusville, Fla. BA 8/29/61. CD 8/16/61.

▲ **Mid-South Constructors, Inc.,** 79 Commerce St., Montgomery, Ala., LB **$2,815,000,** PHYSICAL SCIENCE BLDG., AUBURN, ALA. Bd. Trustees Auburn University, Auburn, Ala. BA 8/29/61. CD 8/2/61.

▲ **Rust Engineering Co.,** 2316 4th Ave. N., Birmingham, Ala., CA Est. **$2,500,000,** recovery boiler for newsprint plant, COOSA PINES (BR. CHILDERSBURG), ALA. Coosa River Newsprint Co., Coosa Pines (Br. Childersburg), Fla.

▲ **Foster & Creighton Co.,** P.O. Box 227, Mobile, Ala., CA **$3,083,000,** 200-bed HOSPITAL ADDN., MOBILE, ALA. Bd. Trustees Mobile Infirmary, c/o City Comn., City Hall, Mobile, Ala. BA 8/29/61. CD 7/18/61.

▲ **R. P. Farnsworth & Co.,** 1515 S. Salcedo, New Orleans, La., LB **$4,170,000,** pavilion type UNION BLDG., BATON ROUGE, LA. Louisiana State University, Purchasing Dpt., Baton Rouge, La. BA 8/31. CD 8/4/61.

▲ **Bosley Springs Corp.,** c/o Swenson & Kott, archts., 1719 West End Bldg., Nashville, Tenn., Owner Builds, **$1,800,000,** 110 APARTMENT UNITS, NASHVILLE, TENN.

MIDDLE WEST

HEAVY CONSTRUCTION—LB & CA

▲ **Tri-State Constr. Co.,** 3100 E. 56th St., Indianapolis, Ind., CA **$1,511,036,** 6,000 ft. RUNWAY, Weir Cook Airport, INDIANAPOLIS, IND. Bd. Aviation, City Hall, Indianapolis, Ind. CA 8/23/61. CD 3/10/60.

BUILDINGS—LB & CA

▲ **Drosd & Drost Constr. Co.,** 2119 S. Green Rd., Cleveland 21, O., Owner Builds, **$1,350,000,** 80 HOMES, site adjacent to Heatherwood Rd., BROOK PARK, O. CD 3/14/60.

▲ **Garfield Housing Corp.,** 6150 Dunham Rd., Cleveland 31, O., Owner Builds, **$1,350,000,** 80 HOMES, Heatherwood Rd., BROOK PARK, O.

▲ **Benson-Dexter Co.,** 508 Blue Jay Trail, Macedonia, O., Owner Builds, **$1,500,000,** 100 HOMES west side Bedford Rd., MACEDONIA, O.

▲ **Kesk, Inc.,** 136 S. Derbigny St., New Orleans, La., CA **$3,639,770,** 348 unit HOUSING, YOUNGSTOWN, O. Youngstown Metropolitan Housing Auth., 976 W. Federal St., Youngstown, O. BA 8/1/61. CA 8/29/61. CD 8/4/61, under LB.

MISSISSIPPI TO ROCKIES

HEAVY CONSTRUCTION—BA

▲† **Kansas**—BA 9/21—U. S. Eng., Box 61, Tulsa, Okla., SPILLWAY and OUTLET WORKS for John Redmond Dam, Council Grove, Morris County, ENG-34-006-62-2. $3,000,000. Extended date. CD 7/6/61.

(Continued on page 64)

WORKHORSE
OZALID'S
NEW PRINTMASTER
900

PRINTMASTER 900
Ht.—70½", Width—84¼", Depth—46½". Newest in Ozalid's family of whiteprinters...all designed to give you the finest reproduction at the lowest possible cost. Whatever your need there's an Ozalid whiteprinter to meet it.

Big volume of engineering prints? Put Ozalid's new Printmaster 900 to work. This new, heavy-duty whiteprinter is a workhorse for capacity, a thoroughbred for quality, a favorite for economy.

Fast! Top speeds up to 75 feet per minute. Versatile... processes any dry diazo material up to 42" wide without sticking. Develops both sides in one pass! Unique... new, sleeveless, scratch-proof developing and simplified control make it top performer in its price class.

Here, in truth, is a new concept in whiteprinting. New ideas, new designs from the leader in the industry that spell new efficiency, reliability, economy in engineering reproduction.

The coupon will bring you the facts on Ozalid's new "900". Facts that may save you thousands yearly. Mail it today.

OZALID®

Division of General Aniline & Film Corporation, Johnson City, New York

REMEMBER, FOR PEAK EFFICIENCY, ALL OZALID WHITEPRINTERS WORK BEST WITH OZALID SENSITIZED MATERIALS

Mr. James A. Travis, Mgr., Marketing
Ozalid, Dept. 226 Johnson City, New York

Please send information on New Printmaster 900.

Name_____

Firm_____

Address_____

City_____

(Continued from page 62)

▲ **Wyo., Cheyenne**—BA 9/26—City, City Hall, 212,000 ft. 26 in. steel PIPE for WATER SYSTEM IMPRVS. Approx. $3,000,000. J. T. Banner & Assocs., 309 S. 4th St., Laramie, engrs. CD 6/2/61.

HEAVY CONSTRUCTION—LB & CA

▲ **MONTANA**—State Hy. Comn., Helena, ROADS, Mont.—**Bud King Constr. Co.**, 1203 Wyoming St., Missoula, Mont., CA **$1,726,708**, 3.4 mi. interstate hy., Butte urban section, Silver Bow Co.;
Mont.—**Wickens Bros.**, Suffolk, Mont., CA **$565,457**, grade, aggreg. surf. and drain 12.052 mi. Van Norman-Glasgow Rd., McCone Co. BA 8/30/61, CA 8/30/61. CD 8/15/61.

BUILDINGS—LB & CA

▲ **A. E. Carlson & Son, Inc.**, 3200 France Ave. S., Minneapolis, Minn., Owner Builds, **$1,640,000**, CO-OPERATIVE APARTMENTS, incl. 11 bldgs. 82 units, W. 27 St., East of Minneapolis, Northfield and Southern Railway tracks, ST. LOUIS PARK, MINN. CD 7/24/61.

▲ **Southwestern Bell Telephone Co.**, 324 E. 11, Kansas City, Mo., received no bids Aug. 22, 8 story 123,672 sq. ft. masonry, steel frame, concrete block OFFICE ADDN., KANSAS CITY, MO. **$4,000,000**. Neville, Sharp & Simon, 25 E. 12 St., Kansas City, Mo., archts. Will re-advertise. CD 8/15/61.

▲ **Inwood Constr. Co.**, Trinity Universal Bldg., Dallas, Tex., CA **$2,500,000**, seven 3 story, 232 units APARTMENTS, 20,000 sq. ft. COMMERCIAL BLDG., 16th and Chester Sts., LITTLE ROCK, ARK. C. C. Collie Jr., 211 Spring St., Little Rock, Ark.

▲ **Pickens-Bond Constr. Co.**, 3712 W. Okmulgee Ave., Muskigee, Okla., CA **$2,760,083**, two DORMITORIES, one CAFETERIA, six APARTMENTS, Oklahoma State University, STILLWATER, OKLA. Bd. Regents, A & M Colleges, Stillwater, Okla. BA 8/15/61. CD 8/24/61, under LB.

▲ **Crestview Homes**, c/o Stan Haertel, Inc., 2085 Newland Denver, Colo., Owner Builds, **$2,250,000**, 1 story, full basement, brick, 150 RESIDENCES, north 80th to 84th West of Sheridan Blvd., ARVADA, COLO.

▲ **Skyline Corp.**, 22 W. Fremont, Englewood, Colo., Owner Builds, Approx. **$2,000,000**, 100 RESIDENCES, 7200 S. Broadway, ENGLEWOOD, COLO.

▲ **Wilkins Co., Inc.**, 1655 High St., Boulder, Colo., LB **$1,533,410**, Bear Creek JUNIOR SENIOR HIGH SCHOOL, LAKEWOOD, COLO. School Dist. R-1, 1580 Yarrow, Lakewood, Colo. BA 8/29/61. CD 8/1/61.

▲ **Noble Homes**, c/o Darrell Shields, 6698 S. Marion, Littleton, Colo., Owner Builds, **$7,000,000**, 300 one and two story HOMES, near 6900 S. Prince in Ridgewood Park, LITTLETON, COLO.

FAR WEST

HEAVY CONSTRUCTION—BA

▲ **Calif., San Diego**—BA 9/27—City, Rm. 161, Civic Center Bldg., Zone 1, Contr. 4, constr. portion INTERCEPTOR SEWER, incl. 102-108 in. rein.-con. pipe. $3,059,700. Plans deposit $24.

▲† **Calif., Castle Air Force Base**—BA 10/24—U. S. Eng., 1209 8 St., Sacramento, precast tilt-up concrete slab metal frame 50-bed HOSPITAL, Castle Air Force Base, near Merced. Spec. 2789. ENG-04-167-62-14. $2,000,000. CD 8/3/61.

BUILDINGS—BA

▲ **Wash., Seattle**—BA 9/21—Swedish Hospital, 1212 Columbia St., 2 and 5 story, 130,000 sq. ft. rein.-con., steel frame HOSPITAL ADDN. $3,200,000. Naramore, Bain, Brady & Johanson, 904 7th Ave., archts. Worthington, Skilling, Helle & Jackson, Washington Bldg., struc. engrs. CD 3/31/61.

CANADA

BUILDINGS—BA

▲ **Ont., Ottawa**—BA 9/19—University of Ottawa, Laurier Ave. E., 4 story MEDICAL BLDG. EXTENSION, $1,350,000. J. S. LeFort, 86 Greenfield Ave., Ottawa, archt. CD 4/5/56.

▲ **B. C., Victoria**—BA 10/6—Royal Jubilee Hospital, 1900 Peel St., steel, concrete south and west HOSPITAL WINGS, renovating HOSPITAL, ADDNS., $3,000,000. Plans deposit $200. Townley & Matheson, 1376 Hornby St., Vancouver, archts. CD 2/20/61.

HEAVY CONSTRUCTION—LB & CA

▲ **BRITISH COLUMBIA**—British Columbia Govt., Parliament Bldgs., Victoria, Bids opened 8/8, ROAD, Dawson, Wade & Co., Ltd., 775 Clark Dr., Vancouver, B. C., LB **$1,203,931**, Proj. 1186, constr. 10.64 mi. Trans-Canada Hy. (Abbotsford-Vedder Crossing Section), Chilliwack Electoral Dist. CD 8/1/61.

▲ **Foundation Co. of Canada Ltd.**, 123 Eglington Ave. E., Toronto, Ont., CA **$1,105,929**, HARBOR REPAIRS, SHIP CHANNEL EXTENSION, Toronto Harbor, TORONTO ONT. Dpt. P. Wks., Sir Charles Tupper Bldg., Ottawa, Ont. BA 8/16/61. CD 8/22/61 under LB.

▲ **Carter Constr. Co., Ltd.**, 419 Cherry St., Toronto, Ont., CA **$10,733,100**, TERMINAL GRAIN ELEVATOR No. 4, marine towers, service bldg., substation and shipping gallery, elevator storage outside services, etc., Montreal Harbor, MONTREAL, QUE. National Harbors Bd., Hunter Bldg, Ottawa, Ont. BA 8/3/61. CD 8/9/61, under LB.

BUILDINGS—LB & CA

▲ **Towers Marts of Canada Ltd.**, c/o B. Rosenberg, 99 Avenue Rd., Toronto, Ont., Owner builds **$2,000,000**, SHOPPING CENTER, 100,000 sq. ft. DEPARTMENT STORE, Wellington Rd. and 4th concession, Westminster Twp., LONDON, ONT.

▲ **E. G. M. Cape & Co.** (1956) **Ltd.**, 79 Scollard St., Toronto, Ont., LB **$3,938,663**, (12 bidders), 11 story, and 2 bsmnt. HOSPITAL EXPANSION, plus addn. of three floors to center wing, steel framing, masonry with brick facing, air-conditioning TORONTO, ONT. Hospital for Sick Children, 555 University Ave., Toronto, Ont. BA 8/30/61. CD 8/15/61.

▲ **Plan d' Habitation Levesque, Inc.**, 65 Ave. Desjardins, Rimouski, Que., Owner Builds, **$1,500,000**, HOUSING, Parish St. Pie IX, RIMOUSKI, QUE.

AMERICANS ABROAD

BUILDINGS—LB & CA

▲ **Sir Robert McAlpine & Sons Ltd.**, Box 1333, Nassau, Bahamas, British West Indies, CA **$1,500,000**, CLUB ADDN.-MARINA, ANDROS, BRITISH WEST INDIES. Lighthouse Club, c/o Charles McKirahan, archt., 2400 E. Oakland Park Blvd., Fort Lauderdale, Fla., U.S.A.

▲† **Badger N. V.** (subsidiary Badger Mfg. Co., 230 Bent St., Boston, Mass., U. S. A.,) CA est. **$2,000,000** design and construct PHTHALIC ANHYDRIDE PLANT, HOEK van HOLLAND, NETHERLANDS. N. V. Chemische Industrie Synres, Hoek van Holland, Netherlands. CD 8/7/61.

LATIN AMERICA

HEAVY CONSTRUCTION—BA

▲ **ARGENTINA**—BA 11/28—Direcc. Nacional Vialidad, Av. Maipu 3, Buenos Aires, ROAD,
paving and bridge R.40 and R.237 Cerro Chico-Collon Cura P. Aguila-Rio Trafui. Neuquen-Rio Negro Prov. Cerro Chico Piedra Del Aguila. $5,262,000.

▲ **ARGENTINA**—BA 12/26—Direcc. Nacional Vialidad, Av. Maipu 3, Buenos Aires, ROAD,
36 klms. basic work and paving Rio Cuarto-Espinillo, Cordoba Prov., Rio Cuarto. $1,687,000.

FOREIGN

BUILDINGS—LB & CA

▲ **Vianini Ltd.**, P.O. Box 287, Monrovia, Liberia, CA Est. **$8,000,000**, 600 HOMES, PUBLIC BUILDINGS, SHOPS and WAREHOUSES, ELECTRIC PLANT, WATER and SEWERAGE SYS., STREET WORK and LIGHTING, Mount Nimba Iron Mine Site and HIGHWAY between Nimba and Senniqueele, LIBERIA. Liberian-American Swedish Minerals Co., Monrovia, Liberia.

For additional reports see CONSTRUCTION DAILY REPORTS SECTION

PROPOSED PROJECTS

WATER SUPPLY

▲ **Mass., Somerset**—Town, Bd. Water Comrs., Town Hall, RESERVOIR and WATER SYS. $3,500,000. Whitman & Howard, Inc., 89 Broad St., Boston, Mass., consult. engr. Bids Nov.-Dec. 1961. CD 8/25/60.

▲ **N. Y., Hamburg**—Town of Hamburg, 501 South Park Ave., WATER TREATMENT PLANT incl. 1,800 ft. outfall lines in Lake Erie. $3,000,000-$3,500,000. (Correction—Cherry & Preble, 87 West Tupper St., Buffalo, N. Y., are not consult. engrs. No such project). CD 7/31/61.

▲ **N. Y., Poughkeepsie**—Town, Town Hall, Dutchess Turnpike, 20 mi. WATER MAINS, water treatment plant, pumping station, storage tanks. $6,985,000. To go ahead 1962.

▲ **Tex., Galveston**—Galveston County Fresh Water Dist. No. 4, Courthouse, FRESH WATER SYSTEM, for Gilchrist, Rollover, Caplen, $1,500,000.

SEWERS, WASTE DISPOSAL

▲ **S. D., Rapid City**—City, City Hall, SEWAGE TREATMENT PLANT, sewerage system ext., $600,000-$2,000,000. Kirkham Michael & Associates, 618½ St. Joe St., Rapid City, consult. engrs. for preliminary survey. May hold bond election in Spring. CD 1/9/52.

▲ **Tex., Port Arthur**—City, City Hall, DRAINAGE, P-Tx-3110, $2,504,700; extensions sanitary sewer lines, P-Tex-3109, $501,110. Turner & Collie, 415 Adams Bldg., Port Arthur, consult. engrs. Harland Bartholomew & Associates, Louderman Bldg., 317 N. 11th St., St. Louis 1, Mo., making master plan. CD 8/8/61.

BRIDGES

▲ **Illinois-Missouri**—City of East St. Louis, City Hall, East St. Louis, Ill., WESTERN BRIDGE APPROACHES, ADDNS., Veterans Bridge across Mississippi River between East St. Louis, Ill. and St. Louis, Mo., $2,000,000. Henry W. Lochner, Inc., 333 N. 9th St., East St. Louis, Ill., consult. engr.

STREETS AND ROADS

▲ **N. Y., Hempstead**—Dpt. Hys., Town of Hempstead, 350 Front St., reconstr., wid'n. and RESURF. highways, streets and roads. $5,500,000.

EARTHWORK, WATERWAYS

▲ **Wash., Auburn**—Drainage Dist. No. 1, County-City Bldg., Seattle, Zone 4, WATERSHED IMPRVS., Green River Valley. $7,000,000. Stevens & Thompson, Hoge Bldg., Seattle, Zone 4, consult. engrs.

AIRPORTS

▲† **Calif., Lemoore**—Dist. P. Wks. Office, 12th Naval Dist., San Bruno, 200 units FAMILY HOUSING, Naval Air Station. $3,460,000 (appropriated). CD 7/22/60.

▲ **Wash., Spokane**—City, City Hall, plans by Warren C. Heylman, W. 1023 Riverside St., Spokane, AIRPORT IMPRVS., Geiger Field, Spokane International Airport. $4,400,000. CD 8/22/61.

UNCLASSIFIED

▲ **Alaska, Anchorage**—City, City Hall, $4,000,000 bond election Oct. 3, TELEPHONE SYS. EXPANSION incl. EXCHANGE BLDG., plant imprvts. CD 10/17/60. 10/17/60.

▲ **Calif., Santa Monica**—City, City Hall, plans by Charles Luckman & Assocs., 9220 Sunset Blvd., Los Angeles 46, Calif., TERMINAL, CONTROL TOWER, OFFICE, restaurant and motel at Municipal Airport. $3,000,000. CD 9/26/45.

▲† **Conn., Groton**—Dist. Pub. Wks., 3rd Naval Dist., 90 Church St., New York, N. Y., 200 units FAMILY HOUSING, Naval Submarine Base, $3,460,000 (appro.). CD 6/25/59.

▲† **Fla., Mayport**—Dist. P. Wks. Office, Sixth Naval Dist. Bldg. 12, U. S. Naval Base, Charleston, S. C. 140 units FAMILY HOUSING, Naval Station, $2,422,000, (appro.).

▲ **Ill., Chicago**—Dpt. Purchases, City Hall, Zone 2, OUTDOOR AMPHITHEATRE, Bandshell, Grant Park, $3,000,000. Bids 1962. CD 6/11/57.

▲ **Louisiana-Trunkline Gas Co.**, Box 1642, Houston, Tex., 52-mi. 20 in. GAS LINE, Bayou Sale to Cow Island. $2,080,000; 76 mi. 26 in. GAS LINE, Longville to Cow Island. $3,420,000.

▲ **N. J., Elizabeth**—City, City Hall, will not construct 3 level, 540,000 sq. ft. combination air-raid SHELTER and PARKING GARAGE, Jefferson Park, Jefferson and Madison Aves., $10,000,000. Albert A. Kaufman & McMurray, 430 Morris Ave., archts. Project abandoned. CD 10/9/59.

PUBLIC BUILDINGS

▲† **Calif., Palo Alta** — Veterans Admin., Munitions Bldg., Wash., D. C., plans by Stone, Maraccini & Patterson, Inc., 536 Mission St., San Francisco, Zone 5, ALTERATIONS to BLDGS. 101, 102, 103, 105, 110, 137 and 205. $4,000,000. CD 8/19/60.

▲† **Calif., Port Hueneme**—11th Naval Dist., 1220 Pacific Hy., San Diego Zone 1, 200 units FAMILY HOUSING, Naval Construction Battalion Center. $3,460,000 (appropriated).

▲ **D. C., Wash.**—D. C. Govt. Dpt. Public Welfare, 499 Pennsylvania Ave., NW, DORMITORIES REPLACEMENT, D. C. Village, Blue Plains, $4,100,000.

▲ **Ind., Indianapolis**—School Bd., Warren Twp. Metropolitan School Dist., 9039 E. 10th St., plans by Everett I. Brown Co., Illinois Bldg., JUNIOR HIGH SCHOOL, Prospect and German Church Rd., $5,000,000. CD 12/31/59.

▲† **Iowa, Des Moines** — Veterans Admin., Munitions Bldg., Wash., D. C., plans by Brooks-Borg, 815 Hubbell Bldg., Des Moines, BUILDINGS 1, 2, 3 and 6 ALTERATIONS, and REPLACING ELECTRICAL DISTRIBUTION SYSTEM, $3,000,000. CD 8/22/60.

▲ **Mass., Bridgewater**—Commonwealth Mass., Dpt. Educ., c/o Div. Bldg. Constr., 38 Chauncy St., Boston, Mass., plans by Whitney, Atwood & Norcross Assoc., 256 Boylston St., Boston, Mass., F-60-IR, SCIENCE and CLASSROOM, State Teachers College. $2,100,000. Albert Goldberg & Assocs., 699 Boylston St., Boston, Mass., consult. engrs. Bids Nov.-Dec. 1961. CD 6/22/60.

▲ **Minn., Osseo**—Bd. Educ. Independent School Dist. No. 279, voted $3,000,000 bonds Aug. 21, SCHOOLS. CD 8/3/61.

▲ **Miss., State College** — Mississippi State University, State College, Miss., plans by James T. Canizaro, 1st National Bank Bldg., Jackson, 250-unit rein.-con., brick married STUDENT APARTMENTS. $2,000,000. Bids about Aug. 15-18/61.

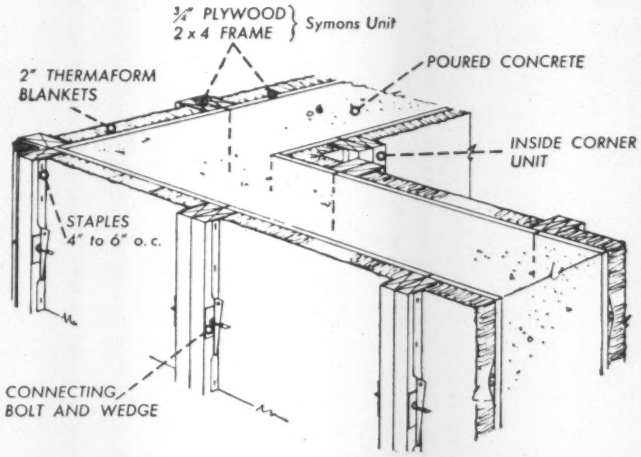
▲ **N. J., Atlantic City**—Atlantic County Improvement Auth., Boardwalk Bank Bldg., plans by The Ballinger

(Continued on page 66)

Two ways to cure concrete safely all winter long

GOLD BOND THERMAFORM

for vertical form work



Thermaform is a mineral wool insulation blanket that applies quickly and easily to concrete forms. Properly used, it keeps concrete at safe curing temperature and cuts your curing costs up to 50% by eliminating enclosures or supplementary heat and fire watchmen.

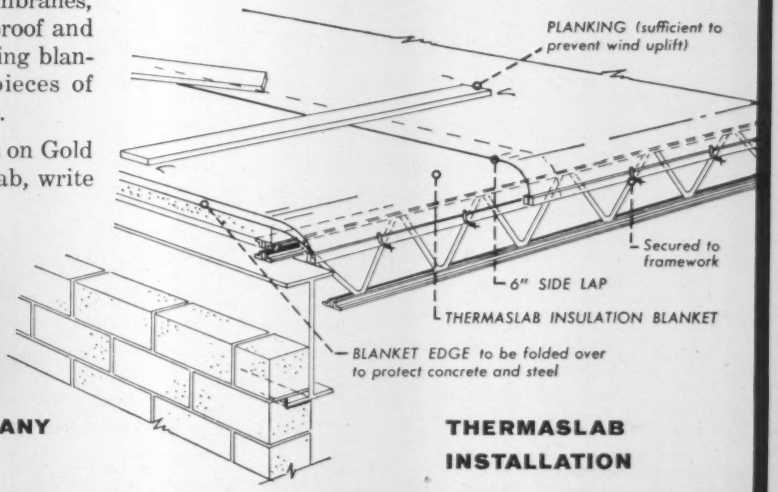
Thermaform comes in widths and lengths to fit all commonly used forms. It's weatherproof and extra strong. Exterior paper is reinforced with glass fibers, and the triple-ply flanges prevent pull-out in high winds. You can leave Thermaform on the forms and use it over and over again.

GOLD BOND THERMASLAB

for horizontal concrete placement

Thermaslab is an insulating blanket composed of a resilient mineral-fiber pad encased between two waterproof membranes, with sides heat sealed to be waterproof and weather resistant. Ends on insulating blanket are inserted between two pieces of 1″ x 2″ lumber for ease of handling.

For samples and technical bulletins on Gold Bond® Thermaform and Thermaslab, write Dept. EN-91.


PLANKING (sufficient to prevent wind uplift)
Secured to framework
6" SIDE LAP
THERMASLAB INSULATION BLANKET
BLANKET EDGE to be folded over to protect concrete and steel

THERMASLAB INSTALLATION

Gold Bond
BUILDING PRODUCTS

NATIONAL GYPSUM COMPANY
Buffalo 13, New York

(Continued from page 64)

Co. Inc., archts.-engrs., 1625 Race St., Phila., Pa., CITY-COUNTY BLDG. $4,000,000.

▲ **N. J., Cranford**—Bd. Educ., Cranford Twp., 210 Miln St., referendum bonds and project Sept. 28, JUNIOR HIGH SCHOOL off Orange Ave. $2,350,000; JUNIOR HIGH SCHOOL, off Hillside Ave. $2,350,000. Epple & Seaman, 901 Broad St., Newark, N. J., archts. CD 2/6/61.

▲ **N. J., Scotch Plains**—Bd. Educ., Township Scotch Plains and Borough Fanwood High School, 1800 E 2nd St., referendum bonds and project Sept. 28th, HIGH SCHOOL on Terrill Road, $2,000,000. Mickle-wright & Mountford, E. Stuyvesant Ave., Trenton, N. J., archts.

▲ **N. Y., New York**—Dpt. P. Wks., Municipal Bldg., Zone 7, plans by Ferrenz & Taylor, 1451 Broadway, Zone 36, Proj. No. Ho-225, Phase I, 20 story Harlem HOSPITAL. $22,000,000. Constr. late 1961; Phase II, NURSES' RESIDENCE, parking Garage. $7,000,-000. Constr. late 1962. Anthony J. DePace, 151 W 46 St., New York 19, N. Y., assoc. archt. CD 3/29/61.

▲ **N. C., Wilmington**—Bd. Comrs. New Hanover Co. Courthouse, $5,500,000 bond election Nov. 7, HOSPITAL, CD 6/15/53.

▲ **O., Cincinnati**—City, City Hall, plans by Cordes Pressler, Huck & Assocs., 4939 Paddock Rd., three, 12 story MARRIED STUDENTS and FACULTY RESIDENCES. $6,500,000. Albert Buenger, 4939 Paddock Rd. and Bosch & Latour, 2186 Victory Parkway, consult. engrs. T. P. Young & Assocs., 123 E. 6th St., structural engr. CD 11/9/56.

▲ **O., Ironton**—Ironton Metropolitan Housing Auth., 130 low rent HOMES $2,217,873.

▲ **O., Port Clinton**—Bd. Educ., bond election Nov. 7, SCHOOLS $2,150,000. Bueher & Stough, 1931 Sylvania St., Toledo, archts. CD 3/30/61.

▲ **Tenn., Elizabethton**—Carter Co. School Bd., voted $2,981,000 bonds Aug. 14, CENTRAL SCHOOL, over $400,000; HAPPY VALLEY SCHOOL, over $400,000; HAMPTON SCHOOL, $400,000. CD 8/3/61.

▲ **Tenn., Nashville**—City, City Hall, MAIN LIBRARY, $1,900,000. Bids Sept. 1962.

▲ **Tex., Austin**—University of Texas, Bd. Regents, Main Admin. Bldg., plans by Jessen, Jessen, Millhouse & Greeyen, 2816 Hemphill Park, Austin; and Phelps & DeWees & Simmons 342 W. Woodlawn Ave., San Antonio, ENGINEERING SCIENCE BLDG., $4,000,000. Reynolds & Morgan, 1003 Insurance Bldg., San Antonio and B. Seagall, Jr., 705 Lamar St., Austin, consult. engrs. CD 6/29/61.

▲ **Tex., College Station**—A & M College, College Station, completion 2nd phase NUCLEAR SCIENCE CENTER, $2,250,000; agriculture experiment station, $982,600-$1,000,000. Bids early 1962.

▲ **Tex., Dallas**—Dallas County, Comns. Court, Courthouse, $18,500,000 bond election Sept. 23, 11½ story COURTS AND JAIL, Jackson, Market, Commerce and Houston Sts., and seven sub-courthouses in Richardson, Garland, Mesquite, Lancaster, Grand Prairie, Irving and Oak Cliff. CD 3/15/61.

▲ **Ont., Gloucester**—The Gloucester Twp. High School Bd., plans by Balharrie, Helmer & Morin, 77 Metcalfe St., Ottawa, COMPOSITE HIGH SCHOOL, Cardinal Heights, Ogilvy Rd., $1,750,000. BA Spring, 1962.

▲ **Que., Cap de la Madeleine**—School Bd. of Cap de la Madeleine, plans by Jean Louis Caron, 1277 Blvd. des Forges, Three Rivers, SECONDARY SCHOOL for GIRLS, TEACHERS RESIDENCE, Blvd. St. Laurent. $1,500,-000. CD 6/16/61.

▲ **Que., Drummondville**—School Bd. of Drummondville, plans by Paul LaBlanche, 880 Mercure Blvd., SECONDARY SCHOOL FOR BOYS, corner Marchand and Pelletier Sts., $1,500,000. BA Summer 1962.

COMMERCIAL BUILDINGS

▲ **Calif., Newport Beach**—Newport Constr. Co., 505 30 St., 7 story, 100,000 sq. ft. COMMERCIAL BLDG., 3 story GARAGE, 32 St. and Lafayette Ave. $3,-000,000.

▲ **Calif., Walnut Creek**—Owner, c/o Morrison & Howards, archts., 203 Williams Bldg., Klamath Falls, Ore., APARTMENT, community recreation facilities, swimming pools and off-street parking, north of Pine St. $6,000,000.

▲ **Colo., Denver**—Sears & Roebuck & Co., Cherry Creek Shopping Center, plans by Piel, Slater, Small & Spenst, 5650 East Evans Ave., 175,000 sq. ft. DEPARTMENT STORE, W. Colfax and Miller Streets, $2,000,000.

▲ **Conn., Seymour**—Horischak Realty, Inc., Morning Star Drive, 150 HOUSES, Morning Star Terrace, off Skokoret Road. $2,098,500.

▲ **Fla., Naples**—Ed. W. Schoenthaler, c/o Zimmerman & Zimmerman archts., 283 Broad Ave., APARTMENT HOTEL. $1,500,000.

▲ **Ill., Chicago**—Illinois Center Corp., 120 S. LaSalle St., plans by Naess & Murphy, archt.-engrs., 224 S. Michigan St., Chicago, two 52 story, steel, rein.-con. APARTMENTS (first phase), 50 story HOTEL, 50 story OFFICE, garage, swimming pools, parks, Illinois Center, Randolph St. and Lake Shore Dr., on air rights, Illinois Central RR. $500,000,000.

▲ **Ill., Chicago**—S. Klein Dept. Stores, 6 Union Sq., New York 3, N. Y., 300,000 sq. ft. DEPARTMENT STORE. $4,500,000.

▲ **Ill., Kankakee**—Citizens Hospital Comn., c/o Dane O. Morgan & Assocs., archts., 314 N. 4th St., Burlington, Iowa, 156 bed Kankakee COMMUNITY HOSPITAL, Rte. 113 and Kankakee River beyond Bird Park, $2,000,000. CD 2/15/60, under Stewards Foundation, as owner.

▲ **Kan., Kansas City**—Kansas Realty Development, Ltd., c/o Robert Brock & Edwin Linquist, attys., V F W Bldg., Topeka, Kan., 200 unit Holiday INN MOTEL. $2,000,000.

▲ **La., New Orleans**—Tulane University, Tulane Campus, plans by Diboll-Kessels & Assoc., 637 Pere Antoine Alley, New Orleans, La. and Richard Koch & Samuel Wilson Jr., Queen and Crescent Bldg., New Orleans, La., 12 story, 118,000 sq. ft. rein.-con. men's RESIDENCE HALL. $2,300,000. Bids Jan. 1962; plans by John M. Lacklin Jr., 4223 Bienville, New Orleans, La. and Favrot & Grimball, 822 Perdido St., New Orleans, La., 30,000 sq. ft. rein.-con. FOOD SERVICE BLDG. $700,000. Bids Jan. 1962. CD 8/2/61.

▲ **Md., Baltimore**—Food Fair Properties, Inc., 355 Lexington Ave., New York 16, N. Y., GREENSPRING MANOR HOUSING DEVELOPMENT, incl. apartments, one family homes and shopping center, northwest border of Baltimore, 242 acres. Over $5,000,000.

▲ **Mass., Boston**—S. Klein Department Stores, 6 Union Sq., New York 3, N. Y., 300,000 sq. ft. DEPARTMENT STORE (site undisclosed). $4,500,000.

▲ **N. J., Bridgewater**—C & C Home Builders, Inc., 445 Foothills Rd., Somerville, N. J., plans by Robert Baker, 219 Amboy Ave., Metuchen, N. J., 56 HOUSES off Country Club Rd. $1,500,000. O'Brien & Bauernschmitt, 75 Livingston Ave., New Brunswick N. J., consult. engrs.

▲ **N. J., East Orange**—Trio Constr. Corp., 67 Hill St., Elmont, N. Y., plans by Gerber & Pancani, 11 Commerce St., Newark, N. J., 23 story APARTMENT, Prospect St. $3,000,000. Robt. Rosenwasser, 375 5 Ave., New York 16, N. Y., struct. engr. Wald & Zigas, 10 E. 39 St., New York 16, N. Y., mech. engrs. CD 5/29/61, under Underwood Constr. Co.—Owner.

▲ **N. J., Hackettstown**—Lamond Constr. Co., 112 W. 42nd St., New York, N. Y., plans by Leo T. Kabis, 5 E. Main St., Danville, 128 bed HOSPITAL. $2,-500,000. Tri-County Medical Center, c/o Frederick Stehman, 245 Main St., Hackettstown, lessee. CD 3/24/61, under N. J., Fort Wayne as Project Location.

▲ **N. Y., Corona**—Tonray Realty Corp., c/o Arthur Davis & Son, archts., 30 Journal Square, Jersey City, N. J., 3 story HOTEL, 114 St. between 37 and 38 Aves. $2,000,000.

▲ **N. Y., Glendale**—Forest Park Crescent, Inc., c/o M. Milton Glass, archt., 31 Union Sq., New York 3, N. Y., 20 story, 240 unit, rein.-con. Forest Park Crescent APARTMENT Union Turnpike between Forest Park and Long Island RR. $3,000,000. Herman Scherr, 11 Park Pl., New York 7, N. Y., mech. engr. Robt. Rosenwasser, 375 Fifth Ave., New York 16, N. Y., struct. engr.

▲ **N. Y., Ithaca**—Cornell University, plans by Warner, Burns, Toan & Lunde, 724 5 Ave., New York 19, N. Y., 3 story bsmnt. GRADUATE SCHOOL of BUSINESS and PUBLIC ADMINISTRATION. $1,500,000. Thos. H. McKaig, 881 Main St., Buffalo, N. Y., mech. engr. Kallen & Lemelson, 1860 Broadway, New York 23, N. Y., struct. engrs. Bids Fall 1961 or Spring 1962. CD 6/14/60.

▲ **N. Y., New York**—Berfond Constr. Corp., 3036 Ave. U, Brooklyn 29, N. Y., plans by Joseph S. Riggio, 120-44 Queens Blvd., Kew Gardens, N. Y., 12 story and pent house APARTMENT, 220 E. 63 St. $2,400,-000. Kallen & Lemelson, 1860 Broadway, New York 23, N. Y., struct. engrs. Enis Baskam, 7 West Marie St., Hicksville, N. Y., mech. engr. Constr. early 1962. CD 2/27/61.

▲ **N. Y., New York**—Samuel Garsky, 1180 Midland Ave., Bronxville, N. Y., plans by Lawrence M. Rothman, 103 E. 125 St., New York 35, N. Y., 16 story 166 unit APARTMENT, northwest corner Second Ave. and E. 24 St. $2,500,000. Murray Hochhauser, 3179 Mark Alan Dr., Wantagh, N. Y., mech. engr. Harwood & Gould, 233 W. 42 St., New York 36, N. Y., struct. engrs. Constr. early 1962.

▲ **N. Y., New York**—Jack Goodstein, c/o Lawrence M. Rothman, archt., 103 E. 125 St., New York 35, N. Y., 20 story 210 unit APARTMENT, southwest corner Third Ave. and E. 32 St. $3,200,000. Murray Hochhauser, 3179 Mark Alan Dr., Wantagh, N. Y., mech. engr. Constr. early 1962.

▲ **N. Y., New York**—Raymax Assocs., 469 Seventh Ave., New York 18, plans by Henry G. Greene, 855 Sixth Ave., New York 1, N. Y., 15 story APARTMENT, 265 W. 15 St. $3,000,000. M. P. Zacharius & Assocs., 34 W. 34 St., New York 1, N. Y., mech. engrs. A. L. Delaney & Assocs., 147 W. 35 St., New York 1, N. Y., struct. engrs. CD 7/12/61.

▲ **N. Y., New York**—Samuel A. Whinston, 2830 Sedgwick Ave., New York, N. Y., plans by Charles N. & Seelig Whinston, 2 Tudor City Pl., New York, Zone 17, 16 story 64 x 187 ft., 147 unit Morris Heights APARTMENT, west side of Sedgwick Ave. near Tremont Ave., Bronx Boro. $2,770,000. Samuel Zinman, 56 W. 45 St., New York, Zone 36, mech. engr. Harwood & Gould, 233 W. 42 St., New York, Zone 36, struct. engrs. Constr. late 1961. CD 3/29/61.

▲ **N. Y., New York**—Yeshiva University, 110 W. 57 St., New York, Zone 19, plans by H. I. Feldman, 415 Lexington Ave., New York 17, N. Y., 8 story DORMITORY southeast corner 185 St. and Amsterdam Ave. $2,000,000. CD 6/27/51.

▲ **N. Y., Oyster Bay**—Rivka Ruchel Home for the Aged, 6 Pickwick Dr. W., Syosset, Rivka Ruchel HOME and HOSPITAL for the Aged, Oyster Bay Twp. (site not selected). $4,000,000.

▲ **N. Y., Vestal**—Shopping Center, Inc., c/o Eastern Shopping Centers Inc., 6L Mall Walk, Yonkers, N. Y., plans by Meyer & Kasindorf, 10 S. Middle Neck Rd., Great Neck, N. Y., 190,000 sq. ft. Vestal Plaza SHOPPING CENTER, Rte. 17 and Susquehanna River. $2,500,000. Sidney Barbanel, 29-46 Northern Blvd., Long Island City, N. Y., mech. engr. Garfinkel & Marenberg, 100 W. 42 St., New York 36, N. Y., struct. engrs. Superstructure Bids Nov.-Dec. CD 10/26/60.

▲ **O., East Cleveland**—Marvin Helf Inc., 10001 Carnegie Ave., Cleveland, Zone 6, plans by Weinberg & Teare, Citizens Bldg., Cleveland Zone 14, two 16 story each high-rise APARTMENT, Superior Rd., south of Terrace Rd., $5,000,000. Constr. Spring 1962.

▲ **Ore., Portland**—University Senior Citizens Inc., 50000 N. Willamette Blvd., plans by Wolff & Zimmer, 1919 SW 12th Ave., 20 story RETIREMENT HOME, $3,000,000. BA early 1962.

▲ **Pa., Mount Pleasant**—Henry Clay Fritch Community Hospital, Mount Pleasant, plans by James H. Ritchie & Assoc., 135 Claredon St., Boston, Mass., HOSPITAL ADDN. approx. $2,000,000.

▲ **Tex., Alvin**—A. A. Tovrea, Alvin, 160 DWELLINGS, House St. to 5 points Rd., $2,400,000. Rayburn C. Cherry, 3721 Gulf St., Houston, consult. engr.

▲ **Tex., Dallas**—Corrigan Properties, 211 N. Ervay St., plans by Stinson & Sawyer, Room 1819, 211 N. Ervay, 15 story, 119 unit, masonry, APARTMENT, 3200 Blk. Maple Ave., $6,000,000.

▲ **Tex., Waco**—Lake Air Hospital, c/o Easterwood, Easterwood & Drennon, archts., 708 N. Valley Mills, 3-4 story, 150 room, 54,000 sq. ft., masonry, HOSPITAL, $1,500,000. Bids Jan. 1961.

▲ **Va., Leesburg**—Leesburg Development Co., P.O. Box 32, Rockville, Md. plans by Cohen Hart & Assoc. 7961 Eastern Ave Silver Spring Md, 215-unit garden type APARTMENT. $2,000,000.

▲ **Va. Richmond**—J. Smith Ferebee, Virginia Bldg., 5th Main, plans by Andrew L. Kidwell, 5407 Patterson Ave., 60 garden-type HOUSES, Country Club area. $2,000,000.

▲ **Va., Sterling**—M. T. Broyhill & Sons, 4610 Lee Hy., Arlington, Sterling Park HOUSING Project incl. Section I-935 HOMES; Section II-539 HOMES; and 1,245 apartment units; Section III-SHOPPING CENTER. Total est. $100,000,000. Section I planned for first year est. $14,000,000. Greenhorne & O'Mara, 6715 Kenilworth Ave., Riverdale, Md., consult. engrs. Pierre Ghent, 5246 Loughboro Rd., N.W., Wash., D. C., land planner.

▲ **Wash., Everett**—Providence Hospital, 916 Pacific St., HOSPITAL ADDN., $1,500,000.

▲ **Wash., Tacoma**—Martin A. Petrich, Sr., 1120 E. D St., 4 story, rein.-conc. OFFICE, STORE, PARKING GARAGE, Pacific Ave. and 9th St., $4,000,000.

▲ **Wash., Yakima**—St. Elizabeth Hospital, 110S. 9th Ave., HOSPITAL ADDN., $2,500,000.

▲ **Wyo., Casper**—Wyoming National Bank, 202 E. 2nd St., plans by Charles Deaton, 1535 Hoyt St., Denver, Colo. 2 story, bsmnt, 42,000 sq. ft. BANK, $1,500,000.

▲ **Alta., Calgary**—Owner c/o W. G. Milne, Leeson-Lineham Bldg., APARTMENT, $3,000,000. CD 1/5/60.

INDUSTRIAL BUILDINGS

▲ **Ill., Kankakee**—Kankakee Electric Steel Co. c/o Jones & McKnight, Inc., 228 N. LaSalle St., Chicago, STEEL PLANT, mile north of Armour Rd., west of Illinois Central RR, $2,625,000.

▲ **Kan., Ulysses**—Cities Service Helex, Div. Cities Service Co., 60 Wall St., New York 5, N. Y. Helium extraction PLANT, approx. $20,000,000.

▲ **Miss., Pascagoula**—Standard Oil Co. of California with Standard Oil Co. of Kentucky, 225 Bush St., San Francisco, Calif., OIL REFINERY, 100,000 bbl. p.d. capacity, incl. 17,000 bbl. p.d. ISORACKING PLANT at Bayou Casote, near here. $125,000,000. Design and construction to proceed following scheduled merger Oct. 1, 1961.

▲ **N. J., Newark**—Hanson & Hanson Inc., 744 Broad St. 170,000 sq. ft. WAREHOUSE and PACKAGING PLANT, Ruppert Stadium site, Ave. K $1,500,000. Vita Foods, Inc., of New York lessee.

▲ **Ont., Toronto**—John Labatt Ltd., Simcoe St., London 1 story BREWERY, Hy. 401 and Islington Ave., $8,000,000. CD 5/15/61.

▲ **Que., Sorel**—North American Elevators Ltd., 300 St. Sacrament St., Montreal, 2,000,000 bu. cap. GRAIN ELEVATOR ENLARGEMENT, Wharff No. 2, Sorel Harbor, $3,000,000.

LATIN AMERICA

▲ **Argentina**—Fabrica Argentina de Engranajes S.A.I.C., subsidiary of Oerlikon Machine Tool Works, Buehrle & Co., Switzerland, PLANT for manufacture fully assembled transmission units and gears for tractors. $4,300,000.

▲ **Brazil**—Cubatao-Carbocloro-Industrias Quimicas, Ltda., (Diamond Alkali International Corp., 300 Union Commerce Bldg., Cleveland, 14, O., U. S. A., Quimica Industrial Medicinalis S. A. and Brazil Warrant Cia de Commercio Participacoes of Brazil and Ibis International Industrial Investments, Italy, electrolytic caustic-CHLORINE PLANT. $15,000,000.

FOREIGN

▲ **Luxembourg, Luxembourg City**—Ministry P. Wks., 22 story prestressed concrete OFFICES for European Coal and Steel Community. $3,000,000.

For additional reports see CONSTRUCTION DAILY NEWSLETTER

17 ARMCO STEEL BUILDINGS SERVE CONTRACTORS AT NIAGARA POWER PROJECT

Steel

Strength
Reliability
Durability

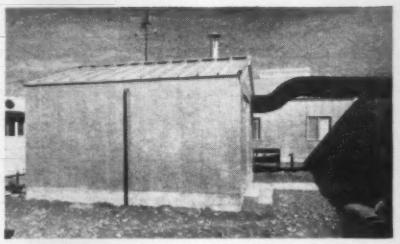
New steels are born at Armco

Turbine Parts Warehouse

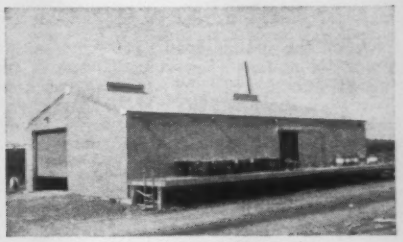
Maintenance Shop

Main Office Building

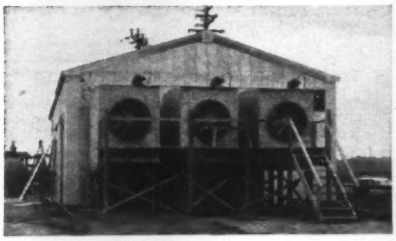
Shop and Warehouse



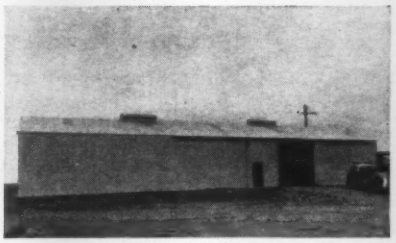
Heating Plant House



Oil and Grease Storage



Compressor House



Tire Service Building

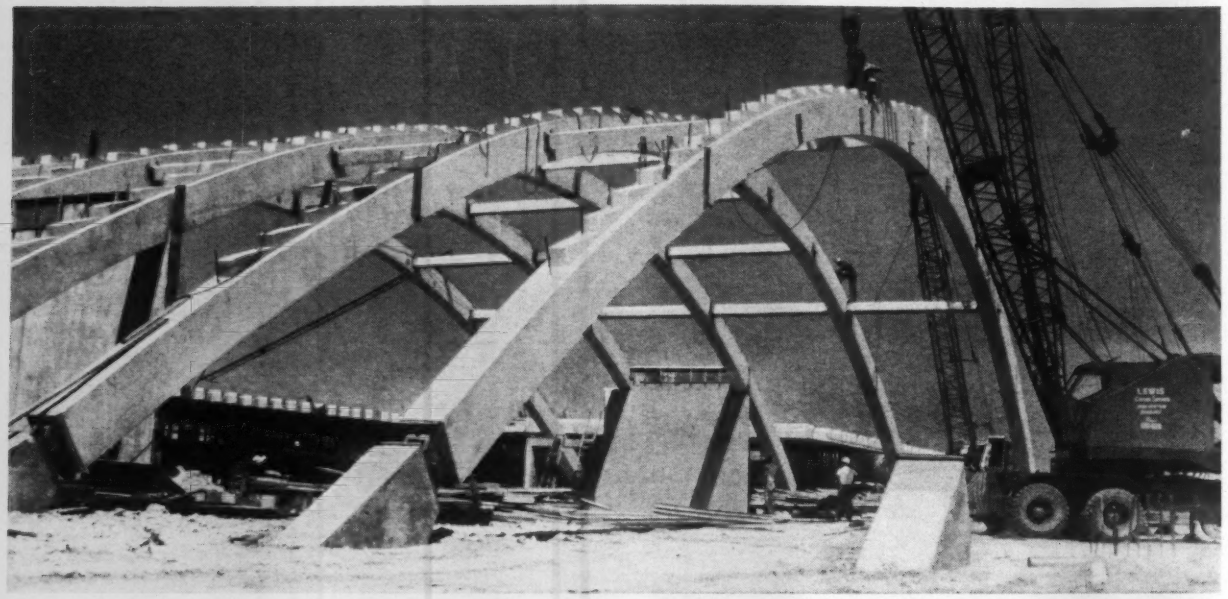
Railroad Maintenance Shop

Ranging in size from 12 x 16 feet to 100 x 300 feet, Armco Steel Buildings serve contractor needs at the gigantic Niagara Power Project. Some buildings are pictured here.

While these are job-site installations, contractors also use Armco Steel Buildings for permanent offices and shops.

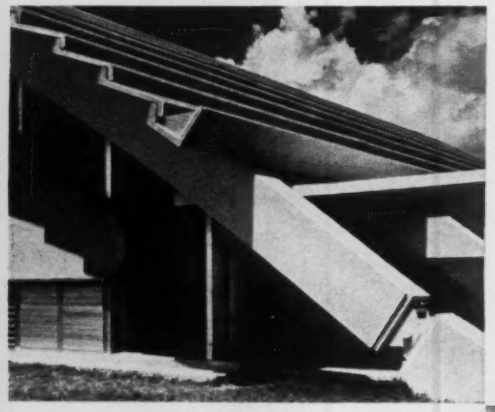
The *new* line of Armco Steel Buildings offers: new series of single-slope-roof structures; new choice of roof pitches for gable-roof buildings; wider spans and greater heights. Write us for details. Armco Drainage & Metal Products, Inc., 4331 Curtis Street, Middletown, Ohio.

ARMCO Drainage & Metal Products



Each of the arches spans 160′ and is spaced 16′ center to center. The arch skeleton is braced by precast lateral members with welded connections. Gym floor space is 12,000 sq. ft., and there is a 10′ wide covered walkway on each side. Note "steps" and projecting dowels cast into arches for securing roof panels.

Closeup shows shape and ceramic tile finish of roof slabs. Each panel spans 16′, is 2″ thick, and 4′ wide including upward and downward legs. Special units at bottom act as rain gutter. Aqua colored high-glaze tile was applied by casting it integrally with the slabs as a form liner. Tiles were later grouted and given a coat of silicone waterproofing.



UNUSUAL PRECAST CONCRETE DESIGN FOR GYM ROOF

Modern precast concrete was imaginatively used to achieve an outstanding combination of function and beauty in Miami Central High's new gymnasium.

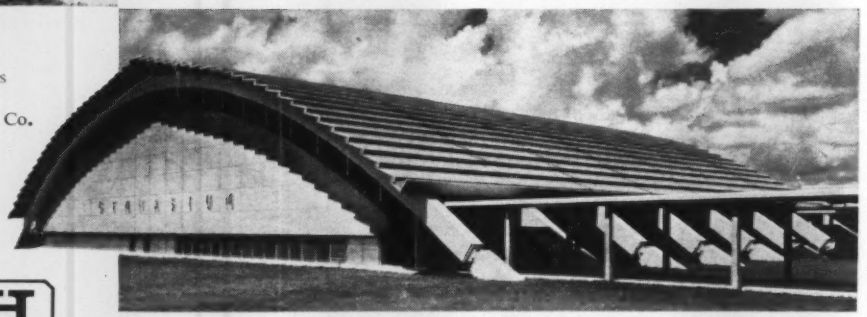
The three-hinged arches were cast on a concrete form at Precast Corporation's plant for minimum tolerances and maximum uniformity. In place, they rise directly from buttress footings supported on precast piling. Unusual precast roof slabs span the 16′ between arches. In addition to upward and downward legs for a shingle-type fit, the slabs also have a unique facing of glazed tile.

Lehigh Early Strength Cement was used for peak efficiency in the production of all precast units. In precasting the arches, for example, its use made it possible to turn out two arch-halves a week from a single form. Lehigh Portland Cement Company, Allentown, Pa.

Miami Central High School Gymnasium

Architects: Polevitzky, Johnson & Associates
Structural Engineers: H. J. Ross Associates
Contractor: Thompson-Polizzi Construction Co.
Fabrication/Erection of Precast Concrete: Precast Corp.

All of Miami, Florida



View of completed gym speaks for its grace and practicality. Roof slabs were attached only by welds to dowels in the arches, solving problems involving thermal expansion and contraction. Then joints were covered with sheet copper strips set in a caulking compound.

LEHIGH CEMENTS

Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BUILDINGS—BA

Mass., Randolph—BA 9/22—Town, School Bldg. Comn., Town Hall, ELEMENTARY SCHOOL. $920,000. Extended date. Edward J. Tedesco, 15 Pleasant St., Woburn, archt. Francis Assoc., Mill St., Marion, mech. engrs. Souza & True, 102 Mt. Auburn St., Cambridge, struct. engrs. CD 8/25/61.

HEAVY CONSTRUCTION—LB & CA

▲ **Landers & Griffin, Inc.,** P.O. Box 638, Portsmouth, N. H., CA Est. **$1,000,000,** RACE TRACK MODERNIZATION, Rockingham Park, SALEM, N. H. Rockingham Park Race Track, Salem, N. H. BA 7/26/61. CD 7/21/61.

BUILDINGS—LB & CA

▲ **Wexler Constr. Co., Inc.,** 118 Needham St., Newton Highlands, Mass., CA **$1,008,800,** Mass 122, HOSPITAL, Highfield, FALMOUTH, MASS. Falmouth Hospital Assoc., 230 Main St., Falmouth, Mass. BA 8/29. CD 9/5/61, under LB.

▲ **Welch Constr. Co., Inc.,** 246 Church St., New Haven, Conn., CA **$1,049,300,** 70 HOUSES, Cheshire View, Second Section, Main St., CHESHIRE, CONN. Joseph A. Bishop Co., 2341 Whitney Ave., Hamden, Conn. CA 9/2/61.

▲ **New England General Contg. Co.,** 341 State St., New Haven, Conn., LB **$1,120,000** (10 bidders), 48,250 sq. ft. Housatonic Valley Regional HIGH SCHOOL ADDN., ALTERATIONS, Rte. 7, FALLS VILLAGE, CONN. Regional School Dist. No. 1, Box 416, Canaan, Conn. BA 8/29/61. CD 8/4/61.

▲ **Ippolito-Lutz Constr. Co., Inc.,** 122 Selleck St., Stamford, Conn., LB **$1,069,525,** (8 bidders), Riverbank ELEMENTARY SCHOOL, Riverbank Rd., STAMFORD, CONN. Town, Purch. Agt., City Hall, Stamford, Conn. BA 8/24/61. CD 7/28/61.

MIDDLE ATLANTIC

HEAVY CONSTRUCTION—BA

▲ **Pa., Feasterville**—BA 9/28—Bower Southampton Municipal Authority, SEWERAGE SYSTEM, PUMPING STATIONS, $3,700,000. Plans deposit $75. Gannett Fleming & Corddry & Carpenter, Inc., 600 N. 2nd St., Harrisburg, engr. CD 2/27/61.

BUILDINGS—BA

▲† **N. Y., White Plains**—BA 9/19—At Office Emilio DiRienzo, archt., 100 Stevens Ave., Mount Vernon, N. Y., 4 story OFFICE and 3 story GARAGE, Church St. and Hamilton Ave., for unnamed owner. $1,000,000. CD 5/10/61.

▲ **N. J., Trenton**—BA 9/28—State Div. Purchase & Property, Room 232-2, State House, Trenton, INDUSTRIAL ARTS BLDG., GYMNASIUM ADDN., Trenton State College. $1,236,000. Plans deposit $25. Gehron & Seltzer, 41 Brentwood Dr., Verona, archts. CD 2/20/61.

▲ **N. J., Union**—BA 10/3—Young Mens Hebrew Assn., 1043 East Jersey St., Elizabeth, YMHA, Green Lane. $1,000,000. CD 7/13/61, under LB.

HEAVY CONSTRUCTION—LB & CA

▲ **NEW YORK**—State Dpt. P. Wks., State Office Bldg., Albany, BRIDGE.

Queens Structure Corp., 32-57 57 St., Woodside 77, N. Y., CA **$1,759,112,** Woodhaven Blvd. BRIDGE 0.34 mi. over Long Island RR. FAWB. 61-1, Queens Co. BA 8/10. CD 8/15/61, under LB.

NEW YORK—State Dpt. P. Wks., State Office Bldg., Albany, ROAD,

Bero Constr. Corp., Box 70, W. River Rd., Waterloo, N. Y., CA **$813,281,** 4.36 mi. Dryden, SH 215, Dryden-Cortland, Pt. 2, SH 535, Rte. 13, FARC 61-9, Cortland Co. BA 8/10. CD 8/15/61, under LB.

Samuel M. Zarpas, Inc., Campbells Run Rd., Carnegie, Pa., LB **$996,000,** TERMINAL BLDG. EXPANSION, Rochester-Monroe County Airport, ROCHESTER, N. Y. Monroe Co., 407 Court House, Rochester, N. Y. BA 8/31. CD 8/14/61.

▲ **Driscoll Constr. Co.,** 1121 Frankford Ave., Phila., Pa., LB **$2,374,490,** Wakeling STREET RELIEF SEWER, Bid 2810, PHILA., PA. Dpt. Procurement, City Hall Annex, Phila., Pa. BA 8/29/61. CD

▲ **MARYLAND**—State Rds. Comn., 300 W. Preston St., Baltimore, Zone 3, ROAD,

M. J. Grove Lime Co., Lime Kiln, Md., CA **$1,295,357,** grade, drain, resurf. 6.015 mi. relocated Md. 26, Winfield past Eldersburg, Winfield, CL-304-11-720, Carroll Co. BA 7/25. CD 8/2/61, under LB.

BUILDINGS—LB & CA

▲ **Charles Rattner,** 26 Court St., Brooklyn 2, N. Y., CA Est. **$2,500,000,** 6 story Herkimer Gardens APARTMENTS, 400 Herkimer St. between Albany and Kingston Aves., BROOKLYN, N. Y. Herkimer Gardens, Inc., c/o contractor. Morris B. Adler, 16 Court St., Brooklyn 2, N. Y., archt. Weiss & Lubell, 151 Montague St., Brooklyn 1, N. Y., mech. engrs. Abrahams Hertzberg & Cantor, 207 E. 37 St., New York 16, N. Y., struct. engrs.

▲ **Grand Iron Works, Inc.,** 525 Tiffany St., New York 59, N. Y., LB Est. **$1,000,000,** STRUCTURAL STEEL for 10 story Research Center adjoining Cardinal Spellman Pavilion, 133-144 West 11 St., NEW YORK, N. Y. St. Vincent's Hospital, 7 Ave. and 11 St., New York 11, N. Y. BA 8/29. CD 8/22/61.

▲ **Kayfield Constr. Corp.** 130 Cutter Mill Rd., Great Neck, N. Y., CA **$881,900,** general contract SERVICE WING at Metropolitan Museum of Arts, 5 Ave. at 82 St., Central Park, Manhattan Boro, NEW YORK, N. Y. Comr. Parks, Arsenal Bldg., Central Park, 64 St. and 5 Ave., New York 21, N. Y. BA 7/18. CD 7/20/61, under LB;

W. J. Brennan, Inc., 277 Water St., New York 38, N. Y., CA **$542,500,** heating, ventilating and air-conditioning work, SERVICE WING, Metropolitan Museum of Art, Manhattan Boro (New York, N. Y.).

▲ **John W. Cowper Co., Inc.,** 1945 Sheridan Dr., Buffalo, N. Y., CA **$1,169,800** SCHOOL and ASSEMBLY HALL, Bldg. 9 incl. service connection School for the Mentally Retarded and Children's Psychiatric Hospital, WEST SENECA, N. Y. State Dpt. P. Wks., State Office Bldg., Albany, N. Y. BA 8/9. CA 8/24. CD 8/18/61 under LB.

▲ **Bernie Constr. Co.,** 32 Shelly Rd., Springfield, N. J., Owner Builds, **$1,200,000,** 40 HOUSES, off Saddle River Rd., FAIR LAWN, N. J. Canger Engineering Co., 620 Plaza Road, Fair Lawn, N. J., engr.

▲ **Mill Creek Manor,** c/o Philip Levin, Avis Ave., Lakewood, N. J., Owner Builds, **$1,000,000,** 100 unit RESIDENTIAL DEVELOPMENT, near Rte. 9, LAKEWOOD, N. J. Morgan M. Davis, 145 Ocean Ave., Lakewood, N. J., archt.

▲ **White Constr. Co.,** 305 East 45th St., New York, N. Y., LB Est. approx. **$1,000,000,** ARTS CENTER, LAWRENCEVILLE, N. J. Lawrenceville School, Administration Bldg., Lawrenceville, N. J. BA 8/24/61. CD 8/15/61.

▲ **Iris Constr. Co.,** 2668 Morris Ave., Union, N. J., CA **$2,000,000,** PLANT, Rte. 27, NEW BRUNSWICK, N. J. New Brunswick Industrial Park, 1441 Morris Ave., Union, N. J. Henry Heide, Inc., New York, N. Y., lessee. (Correction—contractor). CD 9/5/61, under CA.

▲ **Princeton Recreation Center, Inc.,** R.F.D. 3, Princeton, N. J., Owner Builds, **$1,500,000,** 200 units GARDEN TYPE APARTMENT, Rte. U. S. 1, PRINCETON, N. J. Joseph A. Di Palma, 225 South 15th St., Phila., Pa., archt.

▲ **Cedar Glenn Corp.,** 911 West Main St., Toms River, N. J., Owner Builds, **$2,800,000,** 100 units SENIOR CITIZENS HOUSING, TOMS RIVER, N. J. Paul West, 911 West Main St., Toms River, N. J., archt.

▲ **R & B Builders,** 1202 N. 5th St., Phila., Pa., CA **$4,000,000,** 240 units, 4 APARTMENTS, RESTAURANT, KING OF PRUSSIA, PA. Continental Arms Apts., c/o Anthony J. Volpi, 618 Charles St., King of Prussia, Pa. Frank Weise, 307 S. Chadwick St., Phila., Pa., archt.

▲ **Western Electric Co., Inc.,** 195 Broadway, New York, N. Y., cancelled bids to have been opened about Sept 5, DISTRIBUTION CENTER, Railroad Siding, KING OF PRUSSIA, PA. **$7,000,000.** CD 8/28/61.

▲ **Pa. Pub. Sch. Bldg. Auth.,** 101 S. 25th St., Harrisburg, Pa., rejected bids Aug. 10, general constr. HIGH SCHOOL, for Moshannon Valley Jt. Sch. Bd., Proj. No. B1-686, MADERA, PA. LB **$1,186,340.** CD 8/15/61, under LB.

Greenmount Bldg. Corp., 3209 Birch Ave., Phila., Pa. Owner Builds, **$900,000,** RESIDENTIAL DEVELOPMENT (75) PHILA., PA. Hassinger & Schwam, 27 Maplewood Ave., Phila., Pa., archts.

▲ **Hardy Associates,** c/o Sabatino & Fishman, archts., 1503 Walnut St., Phila., Pa., Owner Builds, **$2,500,000,** four 210,000 sq. ft. APARTMENTS, 6900 York Rd., PHILA., PA. Axel Schultz, Norristown, Pa., engr.

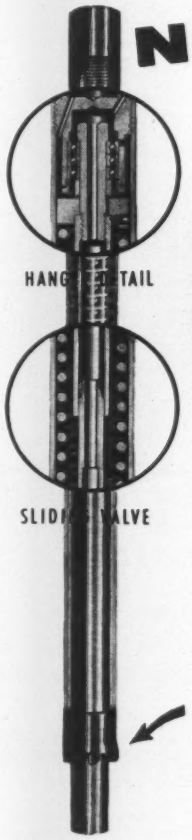
▲ **John McShain, Inc.,** 17th and Spring Garden Sts., Phila., Pa., LB **$3,923,000,** general contract. Bids 4446, MEN'S HOUSE OF DETENTION BLDG., PHILA., PA. Dpt. Procuremet, City Hall Annex, Phila., Pa. Thalheimer-Weitz-Bellante, Clauss, Suburban Station Bldg., Phila., Pa., archts, McCormick Taylor Assocs., Suburban Station, Bldg., Phila. Pa., engr. BA 8/9/61. CD 7/10/61.

▲ **Vessey & Dubin,** 100 W. Rockland St., Phila., Pa., CA **$10,000,000,** RESIDENTIAL DEVELOPMENT (474), Bergundy Development, SOUTHAMPTON, PA. Cottman Builders, Inc., 100 W. Rockland St., Phila., Pa.

▲ **Harold Kushin,** 2020 Chestnut St., Phila., Pa., Owner Builds, **$1,500,000,** 129 units APARTMENTS, Warminster Rd., WILLOW GROVE, PA. Louis J. Cowan, 1505 Pine St., Phila., Pa., archt.

▲ **Frank F. Favazza,** 2529 St. Paul St., Baltimore 18, Md., CA **$1,129,000,** brick, steel, concrete, concrete block SHOPPING CENTER, Frederick and Primrose Aves. BALTIMORE, MD. Riverside Realty Co., c/o Bonnett & Brandt, archts., 701 Cathedral St., Baltimore 1, Md. BA 7/31. CD 8/14/61, under LB.

▲ **Armiger Constr. Corp.,** 1721 Lamont Ave., Baltimore 2, Md., CA Est. **$1,250,000,** 8 story, steel frame, concrete air-conditioned Flagship MOTOR HOTEL (Cooperative), OCEAN CITY, MD. Wm. H. Klebold, Silver Spring, Md. Perry, Lamprecht & Rickert, 2443 N. Calvert St., Baltimore 18, Md., struct. engrs.



NEW! *from* Mobile Drilling

the PITCHER SAMPLER*

*Patents applied for

recovers accurate samples from problem clays, shales and soft rock . . .

DRILLING FLUID CAN'T TOUCH SAMPLE . . .
In soft formations, the spring-loaded Shelby tube is pressed into formation *ahead of cutter barrel.* Sliding valve diverts drilling fluid from initial bottom flush to annular space around Shelby tube.

NO MORE CRUMPLED SHELBY TUBES . . .
In harder formations, cutter barrel telescopes over Shelby tube and cores out sample . . . *automatically protects tube from excessive pressures.*

NO NEED TO REMOVE CUTTING HEAD TO REPLACE SAMPLE TUBE

NO LOST TIME REAMING BETWEEN SAMPLES

Write or phone for details and prices . . . New Mobile Drill Catalog No. 615 available on request.

MOBILE DRILLING, INC.
960 N. Pennsylvania St., Indianapolis 4, Indiana
Dept. 19 • Phone Melrose 4-6323

SOUTH

HEAVY CONSTRUCTION—BA

▲ **Tenn., Knoxville**—BA 9/21—City, City Hall, TERMINAL BLDG. ADDN., McGhee-Tyson Airport, $1,500,000. Plans deposit $100. Baumann & Baumann, 813½ Market St., archts. CD 5/19/61.

▲† **Va., Langley Field**—BA 10/17—National Aeronautics & Space Admin., Bldg. 1195, Langley Field, design, furnish and install two VACUUM SYSTEMS for Hypersonic Aerothermal Dynamics Facility, Proj. L-1871. $2,000,000. CD 8/16/60.

BUILDINGS—BA

▲ **Tenn., McMinnville** — BA 9/21 — Warren County, Courthouse, 2 story, 43,250 sq. ft. HOSPITAL, $1,000,000. Extended date. CD 6/6/61.

▲ **Ga., Macon**—BA 10/4—Macon Housing Auth., 1103 Oglethorpe St., 206 low rent HOUSING UNITS, $2,000,000. Plans deposit $100. CD 10/6/60.

Va., Charlottesville—BA 10/4—University of Virginia, Charlottesville, 4 story HOSPITAL ADDN., ALTERATIONS. $900,000. Plans deposit $40. Baskerville & Son, 2313 West Cary St., Richmond, archts. CD 3/17/55.

HEAVY CONSTRUCTION—LB & CA

▲ **Luke Constr. Co., Inc.**, 3153 Azalea Garden Rd., Norfolk, Va., CA **$1,018,000**, Contract No. 5, MOORES BRIDGES WATER PURIFICATION PLANT ADDN. to bldg. and five filters each 3 m.g. capacity, NORFOLK, VA. City Dpt. P. Wks., City Hall, Norfolk, Va. BA 8/25/61. CA 8/30/61. CD 9/1/61, under LB.

▲ **GEORGIA**—State Hy. Dpt., No. 2 Capitol Square, Atlanta, Zone 3. Bids opened 8/31, ROADS,

Ga.—Foster & Creighton Co., American National Bank Bldg., Nashville, Tenn., LB **$1,410,199**, 2.911 mi. grading, paving on Interstate 85, Interstate Proj., Harris and Troup Counties;

Ga.—C. W. Matthews Contg. Co., 119 Alexander St., Marietta, Ga., and **Ballenger Paving Co.**, Paris Station, Greenville, S. C., and **Southeastern Hy. Contractors**, P.O. Box 476, Gainesville, Ga., LB **$3,141,269**, 5.71 mi. grading, paving on Interstate 20, Cobb and Fulton Counties. CD 8/23/61.

▲ **FLORIDA**—State Road Dpt. of Florida, Tallahassee, Bids opened 8/31, ROADS.

Fla.—R. H. Wright, Inc., Box 8068, Seminole Annex, Fort Lauderdale, Fla., LB **$873,773**, (7 bidders), grading, 6-lane divided limerock base, Type B. b. conc. surf. cse., binder course, two dual grade separation bridge, of conc. deck, prestressed beams conc. piers founded on prestressed conc. piling in Hollywood between Hollywood Blvd. and Taft St. Federal Aid Interstate Proj. No. I-95-1(49) 19 (Job No. 86070-3403), SR 9, Broward Co., LB **$135,518**, (7 bidders), Type B. b. conc. resurfacing, approx. 15.508 mi. from SR 25 (US 27) southeast to SR 7 (US 441) State Proj. Job No. 86080-8502, SR 84, Boward Co.;

Fla.—Gorham Constr. Co., Box 465, Fort Pierce, Fla., LB **$1,012,387**, (7 bidders), 4-lane facility, grading, limerock base, Type 1 b. conc. surf. cse. binder, cse., one prestressed conc. slab unit bridge on precast prestressed conc. piles 148.25 ft. approx. 5.812 mi. between Malabar and Melbourne, Federal Aid Proj. F-003-5 (14) (Job No. 70010-3277) SR 5 (US 1) Brevard Co.;

Fla.—White Constr. Co., Chiefland, Fla., LB **$724,489**, (9 bidders), grading, drainage structures, Interstate facility, State Cross Roads, County Frontal roads, limerock base, Type I b. conc. surf. cse. binder cse. limerock base, Type 2 surf. treat. approx. 5.548 mi. between SR 25 (US 441) est SR 236, Federal Aid Interstate Proj. No. I-75-2(7) 139 (Job No. 26260-3402), SR 93, Alachua Co., CD 8/15/61.

▲ **City of Jacksonville**, City Hall, Jacksonville, Fla., rejected bids Aug. 22, 69 KV pipe type ELECTRICAL CABLES from Talleyrand Generating Station to Randall St. substation, JACKSONVILLE, FLA. LB **$1,128,000**, CD 8/29/61, under LB.

▲ **E. H. Reeder Constr. Co.**, 2128 Hawes Ave., Dallas, Tex., CA **$1,530,226**, Contr. CSD-10, SANITARY TRUNK SEWERS, BATON ROUGE, LA. City, Municipal Bldg., Baton Rouge, La. CD 8/14/61, under LB.

BUILDINGS—LB & CA

▲ **W. A. Sherman**, McLean, Va., CA **$2,603,800**, Thomas A. Edison HIGH SCHOOL, Facchina Tract, Rose Hill, FAIRFAX, VA. Fairfax County Bd. Educ., Fairfax, Va. BA 8/22/61. CD 8/24/61, under LB.

▲ **Reid & Hope Constr. Co.**, P.O. Box 828, Norfolk, Va., CA **$1,158,500**, BUSINESS ADMINISTRATION BLDG., CLASSROOM BLDG., Norfolk div. College of William and Mary, NORFOLK, VA. Virginia Dpt. Educ., State Office Bldg., Richmond, Va. BA 7/12/61. CA 8/29/61. CD 7/18/61, under LB.

▲ **R. H. Wheatley Constr. Co.**, P.O. Box 11391, Charlotte, N. C., LB **$1,123,000**, general contract Hunter Huss HIGH SCHOOL, GASTONIA, N. C. Gaston Co. Bd. Educ., Osceola St., Gastonia, N. C. BA 8/30/61. CD 8/8/61.

▲ **Bd. Regents, University System of Georgia**, 244 Washington Ave., SW, Atlanta, Ga., rejected bids Aug. 31, PHARMACY BLDG., University of Georgia, ATHENS, GA. LB **$1,748,944**, CD 9/6/61, under LB.

▲ **Barge & Co.**, 290 14th St., NW, Atlanta, Ga., LB **$1,072,882**, OFFICE ADDN., ATLANTA, GA. The Marlborough Co., 490 Peachtree St., NE, Atlanta, Ga. BA 8/31/61. CD 8/15/61.

Raymond L. Tassinari, P.O. Box 381, Gainesville, Fla., CA **$952,000**, SHOPPING CENTER, NEW SMRYNA BEACH, FLA. Smryna Shopping Center, Inc., c/o Joseph N. Shifalo, archt., 8 Professional Center, Winter Park, Fla. CD 8/29/61, under LB.

▲ **Hauser Constr. Co., Inc.**, 2643 NE 186th Terrace, Miami, Fla., CA **$1,287,000**, Satellite Beach JUNIOR-SENIOR HIGH SCHOOL, TITUSVILLE, FLA. Brevard Co. Bd. Pub. Instruction, U. S. Hy. 1, Titusville, Fla. CD 9/6/61, under LB.

▲ **Florida Builders, Inc., J. T. Haynsworth & J. C. Shelton**, 700 43rd St. S., St. Petersburg, Fla., CA **$1,147,000**, 118 low rent HOUSING UNITS, WEST PALM BEACH, FLA. West Palm Beach Housing Auth., 3801 Georgia Ave., West Palm Beach, Fla. BA 8/8/61. CD 8/15/61, under LB.

▲ **Aronov Realty Co.**, 542 S. Court St., Montgomery, Ala., LB Est. **$2,000,000**, build-lease OFFICE for Veterans Administration, Selective Service, Dpt. Agriculture and Fish and Wildlife and Air Force Reserve, MONTGOMERY, ALA. General Services Admin., 50 7th St., NE, Atlanta, Ga. BA 9/1/61. CD 8/4/61.

▲ **Leo C. Miller**, 333 E. Bloom St., Louisville 17, Ky., CA **$1,171,000**, women's DORMITORY, Western State College, BOWLING GREEN, KY. Commonwealth Ky., Div. Purchases, 327 Capitol Annex Office, Frankfort, Ky. BA 8/1. CD 8/4/61, under LB.

▲† **Continental Conveyor & Equipment Co.**, Winfield, Ala., CA **$1,000,000**, furnish BELT-CONVEYOR EQUIPMENT for huge coalhandling sys. for Paradise Steam Generating Plant, PARADISE, KY. Tennessee Valley Auth., New Sprankles Bldg., Knoxville, Tenn. CD 3/25/60.

MIDDLE WEST

BUILDINGS—BA

▲ **Ind., College (Br. Rensselaer)**—BA 9/26—St. Joseph's College, Rensselaer, STUDENT CENTER and RESIDENCE HALL. $2,000,000. Frank Fischer & Assocs., 608 South Dearborn St., Chicago 5, Ill., archts.

▲† **O., Miamisburg**—BA 9/26—Atomic Energy Comn., P.O. Box 5400, Albuquerque, N. M., brick, concrete, steel SW BLDG. ADDNS., HOT CELL BLDG. ADDN., 150 ft. steel stack, Mound Laboratory, IFB-292-62-5. $6,500,000. K & H Engineering Co., P.O. Box 952, Toledo, engr. CD 5/7/59.

▲ **O., Loveland**—BA 10/3—Loveland Exempted School Dist., Madeira Rd., HIGH SCHOOL ALTERATIONS. $1,250,000. Plans deposit $50. CD 1/21/60.

▲ **Wis., St. Francis (Br. Milwaukee)**—BA 9/25—School Dist. No. 6, 3819 South Iowa Ave., 1 and 2 story, 85,000 sq. ft. conc., steel., brick, blocks, HIGH SCHOOL. $1,000,000. Plans deposit $50. L. Monberg & Assocs., Inc., 815-57th St., Kenosha, archt. CD 5/10/61.

BUILDINGS—SLC

▲ **Ill., Hillside**—Catholic Cemeteries, 1400 South Wolk Rd., soon lets contract MAUSOLEUM. $4,000,000. Harley, Ellington, Cowin & Stirton, 153 East Elizabeth St., Detroit, Mich., archts.

HEAVY CONSTRUCTION—LB & CA

ILLINOIS—State Dpt. P. Wks. & Bldgs., Div. Hys., Centennial Bldgs., Springfield, ROADS,

Hoeffken Bros., 222 West B St., Belleville, Ill., CA **$938,321**, base course, widening 8.32 mi. Ill. 15 and 158 between Belleville and Macoutah, St. Clair Co. BA 8/21/61, CA 8/31/61. CD 8/24/61, under LB.

▲† **La Crosse Dredging Co.**, 140 South Dearborn St., Chicago, Zone 3, Ill., LB **$1,022,011**, FLOOD CONTROL, Sny Basin, Pumping Sta. No. 3A, Hardin, Calhoun Co., Proj. 11-117-62-6, ILLINOIS, U. S. Eng., Clock Tower Bldg., Rock Island, Ill. BA 8/29/61. CD 7/14/61.

▲ **Fitzsimmons & Connell Dredge & Dock Co., Div Merritt-Chapman & Scott Corp.**, 3025 East 104th St., Chicago, Ill., LB **$2,253,160**, (2 bidders), OUTFALL RAMP and TUNNEL, Central District Filtration Plant, CHICAGO, ILL. Dpt. Purchases, City Hall, Chicago, Zone 2, Ill. BA 8/29/61. CD 8/14/61.

▲ **James McHugh Constr. Co.**, 6449 South Park Ave., Chicago, Ill., LB **$1,029,988**, est. $962,329, (5 bidders), fixed BRIDGE over south Fork Chicago River, Archer, Proj. 80.77-61-10, CHICAGO, ILL. Dpt. Purchases, City Hall, Chicago 2, Ill. BA 9/1/61. CD 8/23/61.

▲ **MICHIGAN and ONTARIO**—International Bridge Auth., Box 317, Saulte Ste. Marie, Mich., Bids opened 8/31, BRIDGE,

Foundation Co. of Canada Ltd., 1220 Bay St., Toronto, Ont., and **Constr. Equipment Co. Ltd.**, 404 Old Weston Rd., Toronto, Ont., LB **$1,010,120**, International Toll Bridge STRUCTURE, concrete deck, grading, drainage, paving, etc. for Canadian spans, approach and plaza, Saulte Ste. Marie, Contr. 9. CD 8/1/61.

BUILDINGS—LB & CA

Schirmer-Peterson Co., 6830 Beaver Ave., Cleveland 4, O. LB **$960,000**, (4 bidders), general contract Moody JUNIOR HIGH SCHOOL ADDN., BEDFORD, O. Bedford Bd. Educ., 475 Northfield Rd., Bedford, O. BA 8/25/61. CD 8/7/61.

▲ **Rubin Realty Co.**, 7103 Aracuma Dr., Cincinnati, O., Owner Builds, **$1,000,000**, 3 story, brick garden type APARTMENTS, Montgomery Rd., CINCINNATI, O. CD 12/13/60.

▲ **Alrose Homes**, 4481 University Parkway, Cleveland 18, O., Owner Builds, **$2,000,000**, 116 HOMES, ELYRIA, O.

▲ **A. Z. Shmina & Sons Co.**, 6275 Schaefer Rd., Dearborn, Mich., CA **$1,309,470**, Kresge HEARING RESEARCH INSTITUTE ADDN., ANN ARBOR, MICH. The University of Michigan Medical Center, 1345 University Hospital, Ann Arbor, Mich. Holabird & Root, 180 N. Wabash, Chicago 1, Ill., archts. CD CD 10/6/60.

MISSISSIPPI TO ROCKIES

BUILDINGS—BA

▲ **Mo., St. Louis**—BA 10/3—Siteman Organization, 7745 Carondelet Ave., Clayton 5, Mo., 15 story, 77½x173 ft. Lindell Terrace APARTMENT, incl. 2 levels below grade for parking, 4501 Lindell Blvd. Over $2,000,000. Hellmuth, Obata & Kassabaum, Inc., 315 N. 10 St., Zone 1, archt. CD 8/10/60, under Siteman, Adreon, Inc., as owner.

▲ **Mo., Berkeley (St. Louis P.O.)**—BA 10/10—Bd. Educ., Berkeley P. Schools, 6001 Berkeley Dr., Zone 21, Frostfield ELEMENTARY SCHOOL ADDN. and/or Berkeley JUNIOR HIGH SCHOOL ADDN. $1,000,000. Hellmuth, Obata & Kassabaum, Inc., 315 N. 10 St., St. Louis, Zone 1, arct. CD 6/27/61.

HEAVY CONSTRUCTION—LB & CA

▲† **U. S. Eng.**, Box 61, Tulsa, Okla., cancelled bids to have been opened Oct. 3, RELOCATION OF STATE HY. 9-Alt. grading, bridge, Eufaula Reservoir, Canadian River, ENG-34-066-62-17, OKLAHOMA, **$1,000,000**. CD 8/30/61.

▲† **W & L Constr. Co.**, P.O. Box 3987, Oklahoma City, Okla., CA **$1,241,514**, est. $1,385,000, rehab. and imprvs. to 660 ARMED SERVICES HOUSING UNITS, Carswell Air Force Base, Part 1, FORTH WORTH, TEX. BA 7/25/61. CD 8/7/61, under LB.

R. M. Wells Co., Inc., Quanah, Tex., LB **$486,079**, Alts 1A & 1B, Part 3, central heat and A. C., 600 ARMED SERVICES HOUSING UNITS, Carswell Air Force Base, ENG-41-613-61-77, (Fort Worth, Tex.).

HEAVY CONSTRUCTION—LB & CA

▲ **Aton Bros Constr. Co.**, 1571 E. Sherokee St., Springfield, Mo., CA Over **$1,500,000**, 3 story OFFICE and Long Distance SWITCHING CENTER, SPRINGFIELD, MO. Southwestern Bell Telephone Co., 1010 Pine St., St. Louis 1, Mo. BA 8/10. CD 8/17/61, under LB.

▲ **Westcott-Bowen Constr. Co.**, 1601 Yolander St., and P.O. Box 502, Lincoln, Neb., CA **$1,154,826**, fire-resistive PHARMACEUTICAL PLANT and laboratories, 1 story, 160,000 sq. ft. plus 35,000 sq. ft. bsmnt. OFFICE, precast prestressed, LINCOLN, NEB. Dorsey Laboratories, 200 N. 15th St., Lincoln, Neb. BA 8/10/61. CD 8/15/61, under LB.

▲ **W. S. Bellows Constr. Co.**, 716 N. Everton St., Houston, Tex., CA Est. **$25,000,000**, general contract 33 story HEADQUARTERS OFFICE, Milam and Louisiana Sts., and Lamar and McKinney Aves., HOUSTON, TEX. Tennessee Gas Transmission Co., Tennessee Bldg., Houston, Tex. CD 4/14/60.

▲ **B. H. Baker Inc.**, Sundance, Wyo., CA **$1,495,626**, est. $1,750,000, (4 bidders), JUNIOR HIGH SCHOOL, CASPER, WYO. Casper-Midwest School Dist., Casper, Wyo. BA 8/24/61. CA 8/31/61. CD 8/2/61.

▲ **Stearns-Roger Mfg. Co.**, 660 Brannock St., Denver, Colo., CA Est. over **$2,000,000**, design and construct URANIUM MILL, Shirley Basin, 60 mi. south of CASPER, WYO. Petrotomics Co., c/o Tidewater Oil Co., 4201 Wilshire Blvd., Los Angeles, Calif. A. H. Ross & Assocs., 62 Richmond St. W., Toronto, Ont., Canada engrs.

FAR WEST

BUILDINGS—BA

▲ **Calif., Northridge**—BA 10/11—State Div. Architecture, 107 S. Broadway, Los Angeles, CLASSROOM BULG. NO. 1, three interconnected concrete bldgs., San Fernando State College, W.O.AD 12 011 C. So,000,000. Plans deposit $100.

HEAVY CONSTRUCTION—LB & CA

▲ **WASHINGTON**—State Hy. Comn., Transportation Bldg., Olympia, Bids opened 9/6, ROAD,

Peter Kiewit Sons Co., 215 South C St., **Vancouver**, Wash., LB **$1,850,598**, (12 bidders), draining, slope stabilization and bridge, Primary St., Hy. 8, Klickitat Co. CD 8/16/61.

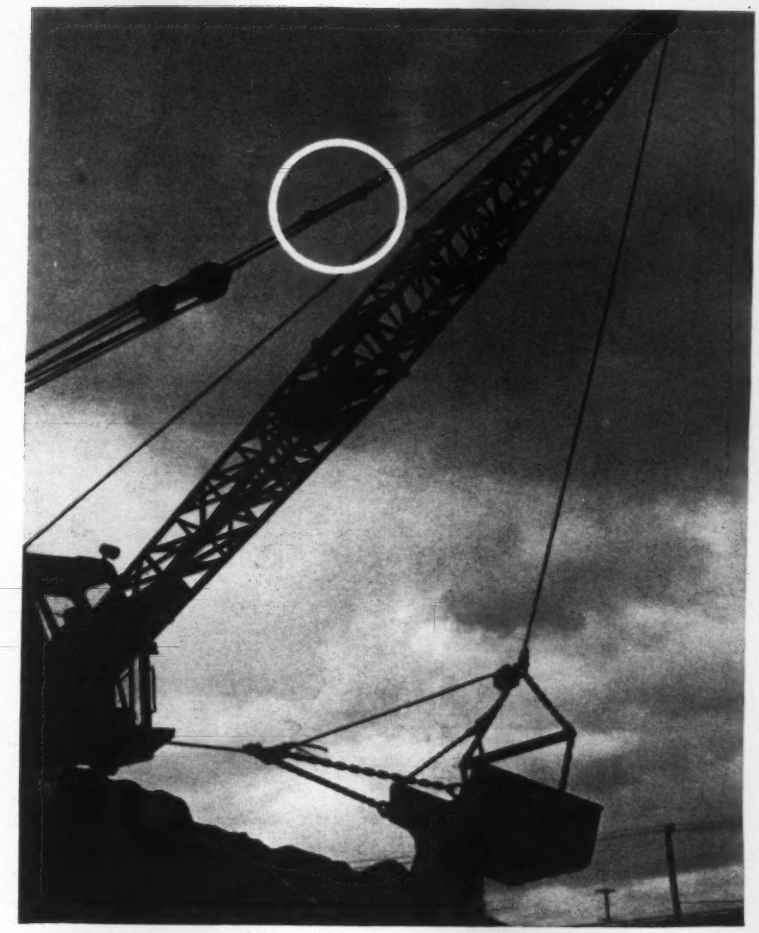
▲ **Conderback, Inc.**, 355 Fremont St., **San Francisco**, Calif., CA Est. **$1,000,000**, 3 story EXHIBIT, Century 21 Exposition, SEATTLE, WASH. Standard Oil of California, 225 Bush St., San Francisco, Calif. Piero Patri of Patri, Patri & Patri, 940 Grove St., San Francisco, Calif., archt. Lawrence Halprin Assocs., 737 Beach St., San Francisco, Calif., landscape archts. Eric Elsesser, 2037 Hyde St., San Francisco, Calif., struc. engr.

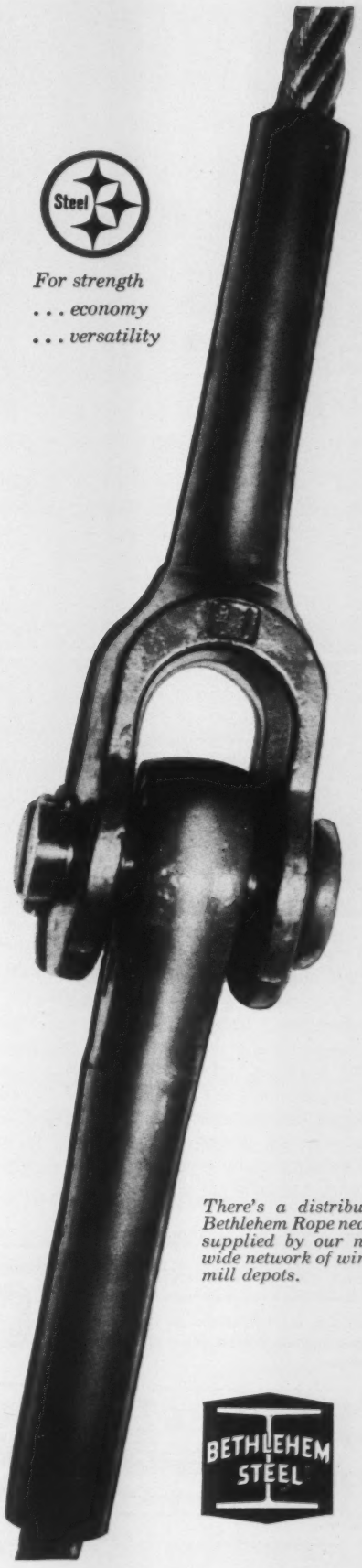
▲ **CALIFORNIA**—State Div. Hys., 1120 N St., Sacramento, ROAD,

Madonna Constr. Co., P.O. Box 910, San Luis Obispo, Calif., CA **$1,084,366**, grading, surf. Sign Rte. 166 between US Hy. 101 near Santa Maria and 1 mi. west of Hussna River, San Luis Obispo Co. BA 8/23, CA 8/31. CD 8/28/61, under LB.

▲ **M & K Corp. & Stolte, Inc.**, 519 California St., San Francisco, Calif., CA **$8,473,000**, 307,000 sq. ft. on piles, lower level rein.-con. South TERMINAL BLDG. Piers F & G, San Francisco International

(Continued on page 72)





For strength
. . . economy
. . . versatility

These Boom Pendants are Built for Heavy Duty

If you've been searching for boom pendants that will do everything you ask of them—and more—specify Bethlehem Boom Pendants with swaged fittings.

Bethlehem Boom Pendants, used with spliced, socketed, or sleeve-type fittings, are engineered for peak performance.

They're made of durable bethanized rope, with each wire zinc-coated electrolytically, prior to being drawn to size. This provides maximum resistance to corrosion fatigue. Maintenance costs are lower, because constant lubrication is not necessary.

Bethlehem Boom Pendants come in a wide range of diameters, lengths, and styles. Our nearest sales office will give you full details.

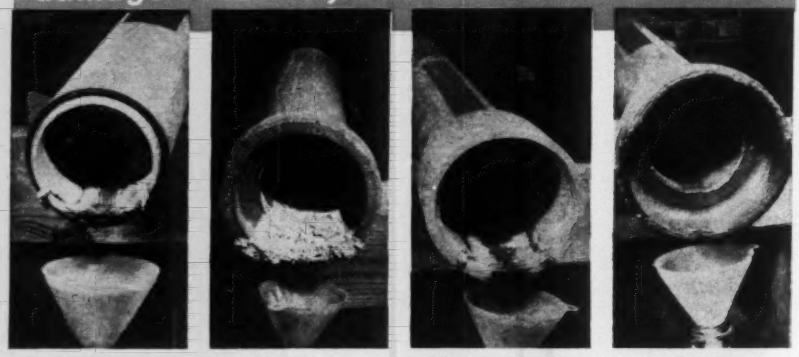
There's a distributor of Bethlehem Rope near you, supplied by our nation-wide network of wire rope mill depots.

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.
Export Sales: Bethlehem Steel Export Corporation

BETHLEHEM STEEL

only CLAY meets the ACID TEST!

Unretouched* photos show corrosion damage caused by the flow of acid solution.



CEMENT-ASBESTOS | CONCRETE | CEMENT-ASBESTOS FOREIGN | CLAY

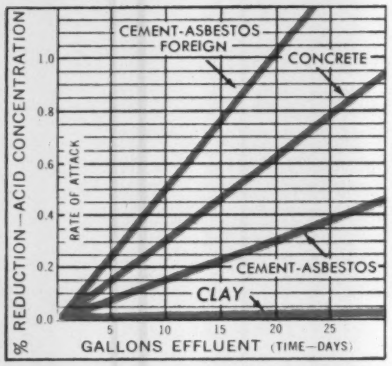
*Manufacturers' brand names deleted.

It's sulphuric acid that destroys sewer lines made of materials bought as substitutes for lifetime Vitrified Clay Pipe. And sulphuric acid—which combines chemically with the binding material in other products to disintegrate them—can't hurt Vitrified Clay, a completely inert material.

Special tests at the Clay Pipe Industry's modern laboratory at Crystal Lake, Illinois, recently illustrated just how damaging this acid concentration can be.

As you can see in these photographs and the chart, the acid started eating up the substitute materials quickly. But it didn't do a thing to lifetime Vitrified Clay.

It's a simple test. Try it yourself before you specify any product for your sanitary sewers other than Vitrified Clay. We just pumped 30 gallons of 8.6 percent sulphuric acid by weight through four different pipe specimens



—in this case, domestic cement-asbestos, concrete, foreign cement-asbestos and clay.

Remember, you can't argue with the facts, and you can't repeal the laws of science. Sewer gas and oxygen are present in all sanitary sewers. And sewer gas and oxygen combined add up to sulphuric acid, which destroys substitutes for Vitrified Clay Pipe.

NATIONAL CLAY PIPE MANUFACTURERS, INC.
1028 Connecticut Ave., Washington, D. C.

Please send me full details on the results of the acid tests on the four sewer pipe materials shown here.

(name)

(company)

(street address)

(city and state)

B-6C23 EN

COMPRESSION SEALED, VITRIFIED
CLAY PIPE
IMPERVIOUS
THE STANDARD in SANITARY SEWERS

NATIONAL CLAY PIPE MANUFACTURERS, INC.
1028 Connecticut Avenue, N.W.
Washington 6, D. C.

(Continued from page 70)

Airport, South San Francisco, SAN FRANCISCO, CALIF. City and San Francisco Co., P. Utility Comn., City Hall, San Francisco, Calif. BA 8/10, CA 8/28, CD 8/23/61, under LB.

BUILDINGS—LB & CA

▲ **Howard S. Wright Constr. Co.**, 414 Pontius Ave., Seattle, Wash., LB **$1,339,000**, (10 bidders), MUNICIPAL GARAGE, SEATTLE, WASH. Bd. P. Wks., County-City Bldg., Seattle, Wash. BA 9/6/61. CD 8/23/61.

▲† **Donald M. Drake Co.**, 1600 N.W. Savier St., Portland, Ore., LB **$1,824,669**, (3 bidders), CLEARING, EXCAV., EMBANKMENT, concrete work, pipe, etc., Santa Rosa Creek Reservoir and Spring Creek Dam and Diversion, near Sonoma, Sonoma Co., CALIFORNIA. Sonoma County Flood Control & Water Conservation Dist., County Admin. Bldg., 2555 N. Mandocino Ave., San Rosa, Calif. BA 8/28. CD 8/9/61.

▲ **Rothschild, Raffin & Weirick**, 875 Sansome St., San Francisco, Calif., CA **$3,004,000**, BIOLOGICAL SCIENCES, Unit 2, University of California Davis Campus, DAVIS CALIF. Office of Architects and Engineers, University of California, Davis, Calif. BA 8/10. CD 8/15/61, under LB.

▲ **Barrett Constr. Co.**, 1800 Evans Ave., San Francisco, Calif., CA **$3,293,000**, 9 story OFFICE, 22 and Mission Sts. SAN FRANCISCO, CALIF. Bayview Federal Savings & Loan Assn., Geary and Palm Aves., San Francisco, Calif. BA 8/18. CD 8/31/61, under LB.

▲ **Carl N. Swenson Co., Inc.**, P.O. Box 558, San Jose, Calif., LB **$1,733,000**, (9 bidders), 4 story, 21,000 sq. ft. rein.-con. County WELFARE BLDG. at Civic Center, SAN JOSE, CALIF. Santa Clara Co. Welfare Dpt., County Courthouse, 20 W. Rosa St., San Jose, Calif. BA 8/24. CD 8/2/61.

▲ **C. S. Plumb Co.**, 1149 N. El Dorando St., Stockton, Calif., CA **$1,406,925**, 2 story steel frame and concrete PUBLIC LIBRARY, STOCKTON, CALIF. City, City Hall, Stockton, Calif. BA 7/26. CD 8/2/61, under LB.

CANADA

HEAVY CONSTRUCTION—LB & CA

▲ **McNamara Constr. Co. of Newfoundland Ltd.**, St. John's, Newfoundland, CA Est. **$2,000,000**, PIERS at Turf Point, 6 mi. AERIAL CONVEYOR from quarries at Flat Bay to Turf Point, crushing bldg., ST. GEORGE'S BAY, NEWFOUNDLAND. Flintoke Co., 30 Rockfeller Plaza, New York 20, N. Y., U.S.A. BA 8/4/61. CD 8/8/61.

▲ **Taylor Woodrow (Canada) Ltd.**, 42 Charles St. E., Toronto, Ont., LB **$2,515,000**, (10 bidders), 1 story, 580 x 505 ft., steel, brick EXHIBITION BLDG., concrete block fdns., TORONTO, ONT. Canadian National Exhibition Assoc., Queen Elizabeth Bldg., Exhibition Park, Toronto, Ont. BA 8/29/61. CD 8/3/61.

BUILDINGS—LB & CA

▲ **Louis Donolo, Inc.**, 8320 St. Lawrence Blvd., Montreal, Que., CA Est. **$1,000,000**, 8 story OFFICE, MONCTON, N. B. Canadian National Railways, C. A. Colpitts, ch. engrs., McGill St., Montreal, Que. BA 8/21/61. CD 8/9/61.

▲ **General Engineering Co., Ltd.**, 100 Adelaide St., W. Toronto, Ont., CA Est. **$2,000,000**, SALT PROCESSING PLANT, PUGWASH, N. S. Canadian Salt Co., Ltd., Hy. 122, Clarkson, Ont.

▲ **Cityvale Plaza Ltd.**, J. W. Johannsen, pres., 911 Carling Ave., Ottawa, Ont., Owner Builds, **$2,500,000**. 10 story OFFICE, 10 STORES, concrete, brick, block, block glass, hot water heating, Merivale Rd., OTTAWA, ONT. Ronald Ogilvie, 227 Somerset St. W., Ottawa, Ont., archt.

▲ **Eastern Constr. Co. Ltd.**, 81 Wallesley St. E., Toronto, Ont., CA Est. **$2,000,000**, (10 bidders), 3 story, 115,000 sq. ft. steel frame, poured conc., air-conditioned OFFICE, Industrial Park, Flemingdon Park Development, TORONTO, ONT. Imperial Oil Ltd., 111 St. Clair Ave., W. Toronto, Ont. BA 8/25/61. CD 8/9/61.

AMERICANS ABROAD

HEAVY CONSTRUCTION—BA

▲† **B.W.I., Bahama Island**—BA 9/27—Dir. Southeast Div. Bureau Yards & Docks, Bldg. No. 13, U.S. Naval Base, Charleston, S.C., U.S.A., PRECISION TRAJECTORY MEASURING SYS. (PTMS) to incl. constr. at three sites to provide for government installed electronics sys., incl. modification of existing bldg. for operations bldg.; provision of antenna supports; small bldgs. for generating plants, theodolite support and storage; precision microwave towers complete and other structures in the Bahamas, Eienthera Island. NBy 37756 Spec. 37756/61. Over $1,000,000.

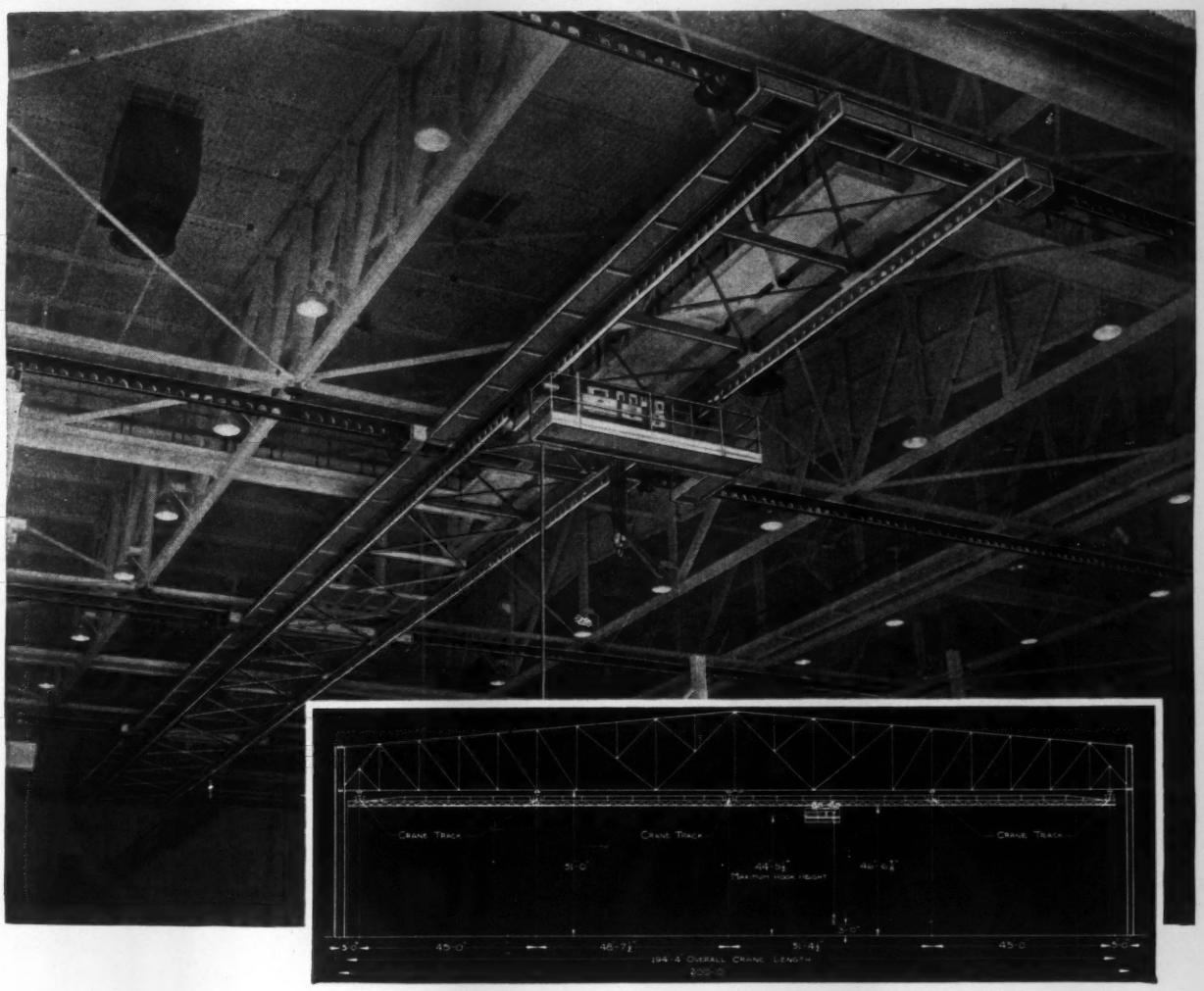
LATIN AMERICA

HEAVY CONSTRUCTION—LB & CA

▲ **ARGENTINA**—Direcc. Prov. Vialidad, Av. Maipu 3, Buenos Aires, ROAD,
Amerital Construcciones SA, Maure 1828, Buenos Aires, Argentina CA **$1,110,000** est. $1,375,000, 22 kms. basic work, flexible paving, one rein.-con. bridge Empedrado-Saladas, Corrientes Prov., Empedrado.

For additional reports see CONSTRUCTION DAILY, REPORTS SECTION

(Proposal Advertisements see pp. 89 to 92)



ONE OF WORLD'S LONGEST CRANES

194'4" LONG CRANE...Believed to be the world's longest multi-runway crane, this 5-ton, double-girder, 5-runway Cleveland Tramrail Crane is in the Static Flight Test Building of the Lockheed Aircraft Corporation, Burbank, California.

Two-speed bridge drive: 37 and 100 f.p.m. Under test load of seven tons, static deflection measured less than ½ inch at center of 51'-4" span between farthest-spaced runway tracks.

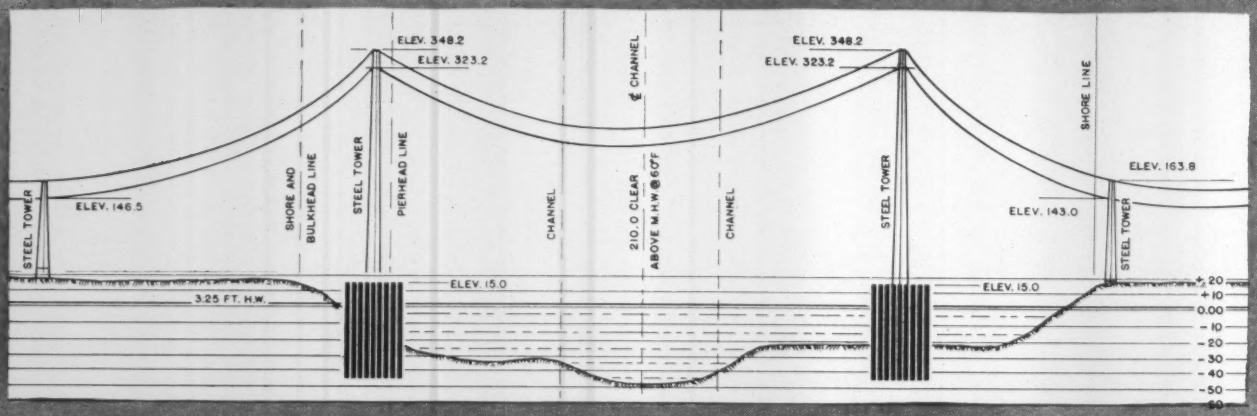
Spell out your crane requirements to a nearby Cleveland Tramrail sales engineer. Whether they call for simple hand propelled cranes or tremendous long-span complex ones, Cleveland Tramrail has had the experience to ably serve you.

WRITE FOR FREE COPY of Engineering and Data Booklet No. 2008. Packed with valuable information. Profusely illustrated.

CLEVELAND TRAMRAIL

Overhead Materials Handling Equipment

CLEVELAND TRAMRAIL DIVISION • THE CLEVELAND CRANE & ENGINEERING CO. • 3163 E. 290 ST. • WICKLIFFE, OHIO



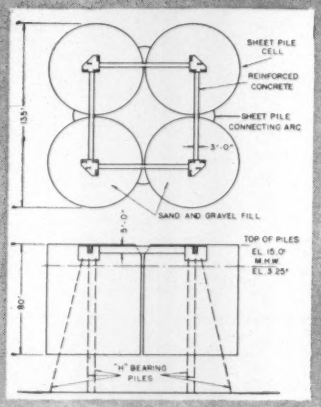
Ships Ahoy . . . steel islands ahead

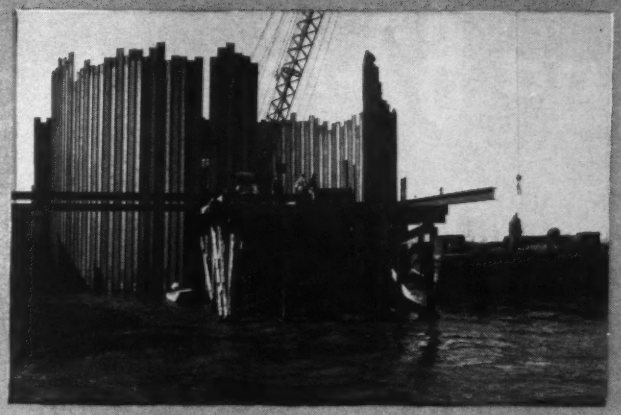
The Delaware River is 4,200 feet wide at the spot where Philadelphia Electric Company wanted to build its new 220,000-volt transmission-line crossing near Chester, Pennsylvania. Clearances for air and river traffic limited sag, restricting the span to 2,800 feet, which meant off-shore suspension towers and danger from heavy river traffic.

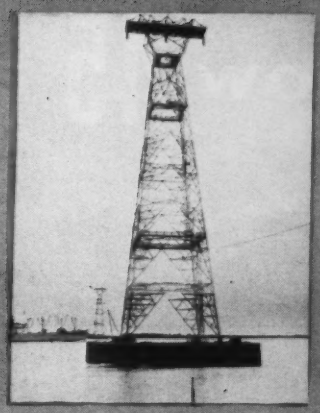
Philadelphia Electric engineers came up with this novel solution: build their own islands with steel sheet piling cells, filled with sand and gravel. These piling islands would offer good basic protection to the towers and also provide a working platform for construction and maintenance.

Each island consists of four 67′-diameter cells interconnected by short arc walls. Tower legs are individually supported on clusters of four steel

for maximum strength and durability







H-Piles driven to 90-ton bearing on rock. A total of 1,850 tons of USS steel sheet piling in sections MP-101 and MP-102 were required.

This foundation was designed on the basis that a cell could be destroyed without endangering the tower, although the islands are well out of the ship channel as shown by the plan at the upper left.

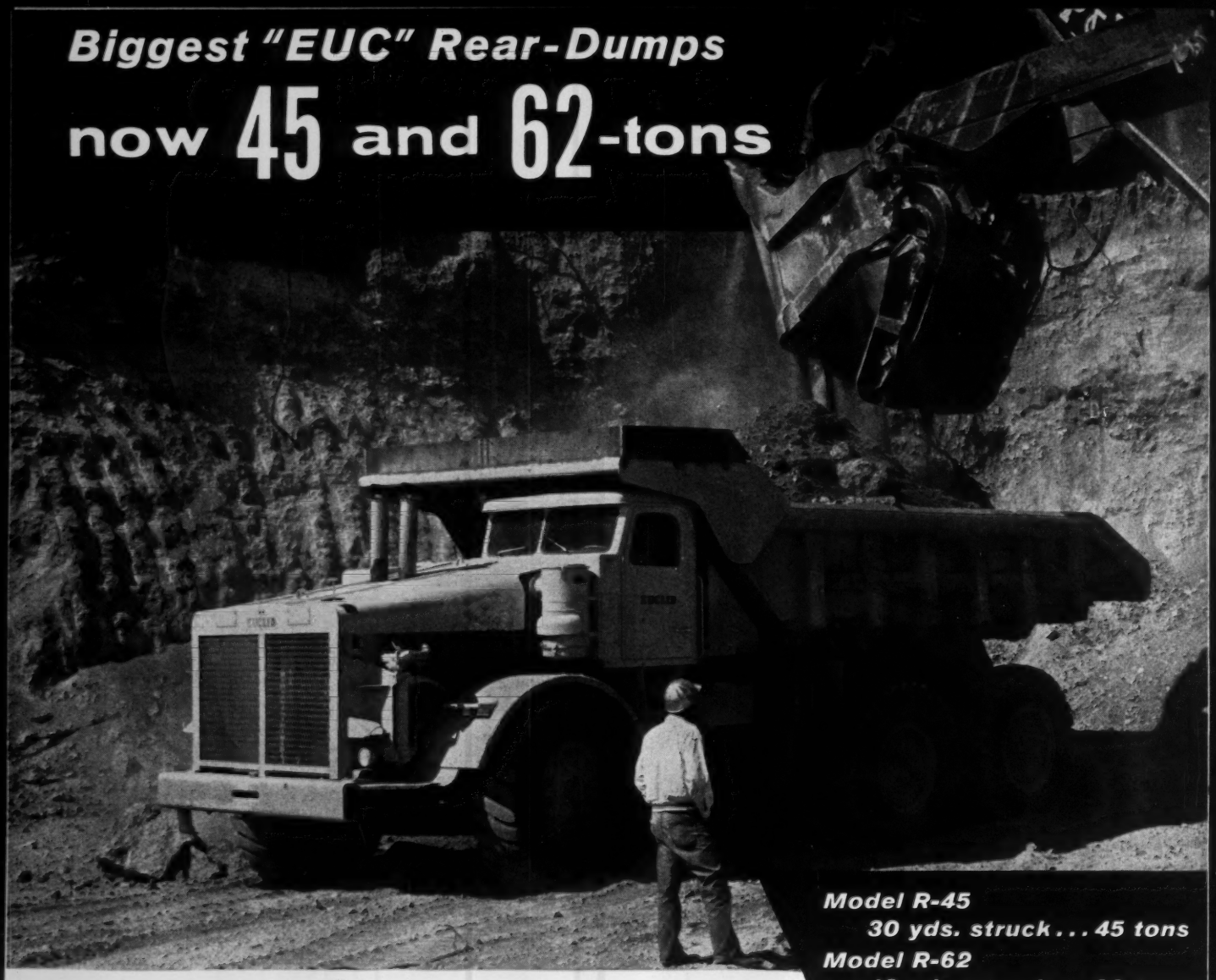
In support structures like this, steel sheet piling and H-Piles do the very best job, and at the lowest cost. Wherever you are building, you can get any type of piling when you want it from United States Steel. Just call our nearest office. For technical information write United States Steel, 525 William Penn Place, Pittsburgh 30, Pennsylvania.

United States Steel Corporation • Columbia-Geneva Steel Division
National Tube Division • Tennessee Coal and Iron Division • United States Steel Export Company

USS **United States Steel**

TRADEMARK

Biggest "EUC" Rear-Dumps now 45 and 62-tons



Model R-45
30 yds. struck . . . 45 tons
Model R-62
40 yds. struck . . . 62 tons

Designed and built for heavy off-highway service in construction, mine, quarry and industrial work, Rear-Dump "Eucs" have paced the industry for over 25 years. Now rated capacities of the two biggest models have been increased to meet field demand for still larger payloads than before.

For work under large loading shovels on the big tonnage, big yardage jobs, check these Model R-45 and R-62 "Eucs". They have payload capacities of 90,000 and 124,000 pounds and replace the widely used 40 and 55-ton models in the Euclid line of rear-dumps.

Use of high strength alloy steel for all body wearing surfaces cuts net weight and increases payload capacity . . . there's no compromise on the rugged durability and performance that "Eucs" are known for throughout the world. And, although they're new in size, both the R-45 and R-62 have years of job-proved dependability since they are of the same design and incorporate the same major components as the well-known models they supersede.

Have your Euclid dealer give you detailed information and show you how these big "Eucs" can cut your hauling costs. Euclid Division of General Motors, Hudson, Ohio

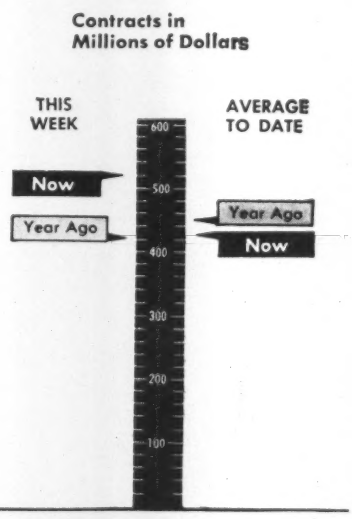
GM GENERAL MOTORS EUCLID

EUCLID

DIVISION OF GENERAL MOTORS, HUDSON, OHIO
Plants at Cleveland and Hudson, Ohio and Lanarkshire, Scotland

Construction Scoreboard

This Week . . .



AMOUNT OF CONTRACTS LET

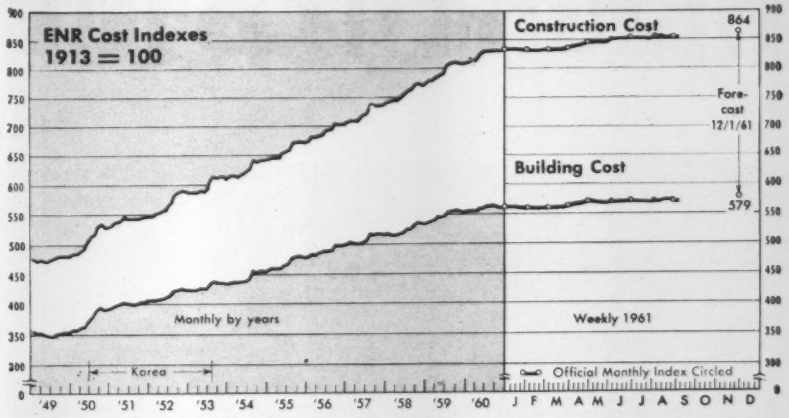
Contracts Awarded In 50 States By Type	This Week	Cum. 37 wks 1961	Chge '60-'61 %
	millions		
All Heavy Construction	$523.3	$15,825.1	− 4
By Ownership			
PRIVATE	254.2	7,656.9	−12
PUBLIC	269.1	8,168.2	+ 6
State & Municipal	240.7	6,313.8	+ 6
Federal	28.4	1,854.4	+ 4
By Type of Work			
PUBLIC			
Waterworks	10.6	282.6	−16
Sewerage	20.9	537.2	+28
Bridges*	8.3	466.4	−20
Highways	114.1	2,759.3	+14
Earthwork, Dams & Waterways	13.8	593.6	+ 1
Buildings:			
Excl. Housing	64.1	1,931.9	+10
Housing	10.2	615.9	+20
Unclassified	27.2	981.9	−10
PRIVATE			
Buildings:			
Mass Housing	164.7	3,508.5	−17
Commercial	52.2	1,877.3	+ 5
Industrial	27.8	1,963.1	− 5
Unclassified	9.4	307.4	−52

*Includes Private bridges

NOTE: Minimum size projects included are: Waterworks and waterways, $53,000; other public works, $88,000; industrial buildings, $110,000; other buildings, $400,000.

NEW CONSTRUCTION CAPITAL

	Week of Sept. 7	Cum. 36 wks 1961	Chge '60-'61 %
	millions		
Corporate Securities	$ 45.1	$ 2,362.4	+10
State and Municipal:			
All Except Housing	16.0	4,628.7	− 1
Housing	0	97.9	−47
Federal Loans	0	187.9	+53
Federal Aid	0	2,990.6	+10
Total Nonfederal	$ 61.0	$10,267.6	+ 4
Federal Appropriations:			
Projects in U. S.	0	268.6	−89
Outside U. S.	0	2.3	−99
Total New Capital	$ 61.0	$10,538.5	−16



ENR INDEXES 1913 = 100), 20-cities' average	Week of Sept. 7 1961	% Change from Aug. 10 1961	% Change from Sept. 8 1960
Construction Cost	854.11	−0.02	+2.8
Building Cost	571.44	+0.1	+1.7

To convert above indexes to 1926 = 100: Divide Construction Cost by 2.080; Building Cost by 1.850. 1949 = 100: Divide Construction Cost by 4.770; Building Cost by 3.518.

Latest Month . . .

ENR COST INDEXES IN 22 CITIES, 1913 = 100

City	Construction Cost Sept. 1961	Construction Cost Percent Change from last Month	Construction Cost Percent Change from last Year	Building Cost Sept. 1961	Building Cost Percent Change from last Month	Building Cost Percent Change from last Year
Atlanta	647.77	0	−0.3	504.20*	+0.1	+0.7
Baltimore	755.91	0	+0.2	562.50	0	+0.3
Birmingham	679.81*	0	+3.9	534.66*	0	+1.7
Boston	884.59	0	+6.2	593.83	0	+4.8
Chicago	947.28	0	+3.4	594.72	0	+0.5
Cincinnati	866.37	0	+2.7	555.22	0	+1.0
Cleveland	977.75	+0.2	+3.6	575.16	+0.4	+2.6
Dallas	660.32	0	+3.3	531.05	0	+1.4
Denver	776.87	0	+1.4	558.18	0	+1.3
Detroit	984.14	0	+2.1	614.41	0	+1.5
Kansas City	837.88	0	+2.4	561.98	0	+0.6
Los Angeles	939.85	−0.3	+3.5	579.18	+0.9	+1.8
Minneapolis	912.84	0	+2.5	586.65	0	+1.0
New Orleans	669.71	+0.2	+4.7	516.70	+0.3	+1.8
New York	1,077.58	0	+3.8	669.96	0	+3.4
Philadelphia	843.52	−0.4	+1.6	588.49	−1.3	+0.6
Pittsburgh	897.54	+0.3	+1.4	630.38	+1.4	+1.5
St. Louis	915.42	−0.2	+2.2	580.62	−0.2	+0.3
San Francisco	916.99	−0.3	+3.9	570.78	+1.2	+1.9
Seattle	887.25	0	+3.8	518.77	0	+2.5
U. S.—20 Cities' avg.	854.01*	−0.01	+2.8	571.34*	+0.08	+1.6
Montreal	640.99	0	−1.5	450.68	0	−3.4
Toronto	701.17	+1.4	+1.3	493.30	0	+0.2

* Subject to adjustment because of retroactive wage increases

CONTRACTS AWARDED

	1961 Aug. (millions)	1961 8-Mos. (millions)	Percent Change from 1960 Aug.	Percent Change from 1960 8-Mos.†
Total U. S. (ENR reported)	$2,220	$15,033	− 4	− 2
Private	1,085	7,284	−10	−11
Public	1,134	7,749	+ 1	+ 7
State and Municipal	954	5,948	+ 5	+ 7
Federal	180	1,801	−14	+ 6
ENR Volume Index, 1913=100	587	572	− 7	− 4

NEW CONSTRUCTION CAPITAL

Total U. S.	1,035	10,477	+39	− 7
State and Municipal Bond Sales	627	4,711	+20	− 2
Corporate Security Sales	202	2,317	− 4	+16
Federal Loans, Aid (nonfederal work)	4	3,178	−66	+ 9
Federal Appropriations, (federal work)	202	271	....	−82

* Includes funds for outside U. S.

† Based on average week: 5 weeks in August '61, 4 weeks in August '60, 35 weeks in the first eight months of '61, and 34 weeks in the first eight months of '60.

EIGHT TESTED—LORAIN

Two Lorain Moto-Loaders, Model ML-309, with 9000 lbs. operating capacity, are shown loading shot rock at the quarry face. One is equipped with a 3-yd. bucket, the other with a 4-yd. bucket.

Mr. Robert A. Silvernail, Superintendent, describes the Best operation as a quarry and a processing plant where the rock is processed, dried, sorted and graded for the market, plus a concrete block plant known as Bestone Inc.

MOTO-LOADERS® CHOSEN

Walter C. Best Inc. at Chardon, Ohio, tested eight different makes of front end loaders, including Lorains, in their quarry. After several thousand hours of carefully documented, on-the-job operation in 1960, they unhesitatingly chose Lorain Moto-Loaders. Two Lorain Moto-Loaders ML-309 have been handling all the production on this operation since January 1961 without a single hour of down time. Much of the 200,000-ton yearly output of silica sand and aggregate is handled 2 or 3 times.

Replaces 8 pieces of other equipment

The two Moto-Loaders replaced a whole fleet of other types of equipment and made it possible for Best to revise completely their production procedures.

Less than half the capital needed

Because less equipment is needed, less capital investment is required. Best claims they reduced their capital needs by more than 50% by turning to the Moto-Loader method.

Man-hours reduced 75%

Labor costs went down drastically after the Moto-Loaders were installed. Man-hours were reduced from 120 to 30 *a day*.

Down time eliminated

Robert A. Silvernail, Best's Superintendent, says, "The rugged dependability of these units saves us hundreds of dollars in down time a year. They simply do not break down, and maintenance is confined to lubrication and oil changes. This can spell the difference between profit and loss on many an operation. *There has been no down time for any other reason.*"

Versatility is invaluable

Mr. Silvernail continues, "We don't believe there is anything these Moto-Loaders can't do. They have loaded trucks with the shot rock, stockpiled materials, stripped overburden, cleaned out a swamp, moved a 2-ft. layer of rock to grade for a road, dug excavations, moved trees and heavy machinery, cleared snow, pushed and towed trucks and railroad cars, charged bins and substituted for winches. You name it and Moto-Loaders do it for us. They are invaluable. Either machine is ready at any time to do the work of four different ones, at four different places and you know that this kind of versatility makes them pay and is saving you money."

One Moto-Loader double-shifted

During eight months of the test period one Moto-Loader was double shifted for a total of 2300 hours of service and loaded out 100,000 tons of stockpiled material to trucks in that period.

Moto-Loaders balance important—Drivers find them less tiring

The balance of power, weight and control contributes heavily to the performance of these Lorains. "The ML-309's are splendidly balanced, even at full load, which makes them easy to operate. The drivers find them less tiring, and this contributes to the men's efficiency and safety on the job," is the way Mr. Silvernail puts it.

Other features, too

To get the kind of dependable, cost-cutting performance experienced by Best requires many advanced design, construction and operating features. You don't out-perform seven other top brands of loaders without real, solid reasons. Here are some of them.

One-foot control. Control of selection of forward and reverse and acceleration is done with just one foot. Both hands free for steering and other controls.

Four-speed, full-power shift gives continuous straight-through, full-power shifting from 1 to 4 without stopping for selection. This Lorain Moto-Matic Transmission, plus torque converter speeds up cycles.

"Safety" arms, S-shaped for greater reach, provide full side visibility at all times. The bottom edges stay below cockpit sides at all times for complete safety.

Better tractive effort is obtained through 4-wheel drive using planetary axles with high traction differentials. Torque is kept at the ground where it belongs.

Want to know more? Why not see your nearby Moto-Loader dealer for all the reasons? Or arrange a demonstration so you can see for yourself what a Lorain Moto-Loader can do. You'll be glad you did.

THE THEW SHOVEL COMPANY, LORAIN, OHIO

LORAIN®

DOES MORE FASTER • FOR LESS

PLANTS in Lorain and Elyria, Ohio.
PRODUCTS—Power shovels, cranes, draglines, clamshells, and hoes on crawlers from ⅜- to 2½-yard capacity • Cranes from 7 to 80 tons . . . on crawlers, and as rubber tire Moto-Cranes, and Self-Propelled Cranes • Rubber tire front-end Moto-Loaders in 6,000-lb., 7,000-lb., and 9,000-lb. operating capacities.
OUTLETS—Lorain products sold and serviced by 249 distributor outlets throughout the world.

Capital Spending Abroad by U. S. Industry

(Millions of Dollars)

INDUSTRY	Actual* 1960	Planned** 1961	Planned** 1962	% Change 1961–62
Primary Metals†	$101	$103	$108	+ 5%
Machinery	132	173	178	+ 3
Electrical Machinery	104	134	118	−12
Transportation Eqpmnt incl. autos	336	544	522	− 4
Other Metalworking	42	40	44	+10
Chemicals	237	275	289	+ 5
Paper	78	72	69	− 4
Rubber	68	73	80	+10
Stone, Clay & Glass	37	44	48	+10
Food & Beverages	97	108	100	− 7
Misc. Mfg. incl. Textiles	105	100	95	− 5
ALL MANUFACTURING	1,337	1,666	1,651	− 1
PETROLEUM INDUSTRY	1,467	1,760	1,637	− 7
Manufacturing and Petroleum	2,804	3,426	3,288	− 4

*Source: U.S. Commerce Dept. †Includes some mining companies. **McGraw-Hill Economics Dept.

Where the Money Will Go

(Millions of Dollars)

	Actual* 1960	Planned** 1961	Planned** 1962
ALL MANUFACTURING			
Canada	$384	$350	$289
Latin America	207	269	291
Common Market Nations	358	516	539
Rest of Europe	250	360	321
Other	138	171	211
PETROLEUM INDUSTRY			
Canada	360	370	329
Latin America	340	475	409
Common Market Nations	151	187	200
Rest of Europe	194	214	229
Other	422	514	470

*U.S. Commerce Dept. **McGraw-Hill Economics Dept.

U.S. Firms Trim Foreign Outlays

U. S. manufacturers and petroleum companies plan a cut of 4% next year in new capital investment overseas.

A survey conducted in August by the McGraw-Hill Economics Department shows that spending will drop to $3.3 billion in 1962, from a planned 1961 total of $3.4 billion. The money will go for expansion, modernization and replacement of both plants and equipment.

The $3.3-billion total splits almost evenly between manufacturers and petroleum companies. Manufacturers, however, plan only a 1% slice in 1962 outlays; petroleum companies will cut 7%. Petroleum company outlays will drop in every region but Europe.

The construction industry can count about $660 million of the total as its share of the $1.65 billion that manufacturers expect to spend for new capacity, including expansion of existing capacity. This represents 40 cents out of every dollar manufacturers expect to invest outside the U. S. next year. The remaining 60 cents per dollar will go for modernization or replacement.

The Common Market countries—France, West Germany, Italy, Belgium, The Netherlands and Luxembourg—will get the largest amount of total manufacturing outlays, $539 million. The rest of Europe will get $321 million.

Competition will continue to make it extremely difficult for U. S. contractors to dig deeply into the rich Common Market area where U. S. manufacturers expect to spend $250 million on new capacity alone next year. The rest of Europe probably equals the Common Market area in its severity of competition where manufacturers plan spending of $125 million in new capacity.

Domestic Capital Outlays

	1961 (estimate)	1961 (Billions of Dollars) Jan.-Mar. (actual)	Apr.-June (actual)	July-Sept. (estimate)	Oct.-Dec. (estimate)
ALL MANUFACTURING	$13.80	$3.00	$3.46	$3.44	$3.90
Durable Goods Industries	6.28	1.41	1.58	1.54	1.75
Primary Iron and Steel	1.16	.28	.28	.30	.30
Primary Nonferrous Metals	.26	.07	.07	.07	.06
Electrical Machinery & Equipment	.68	.15	.17	.16	.20
Machinery, Except Electrical	1.10	.25	.28	.26	.32
Motor Vehicles and Equipment	.78	.15	.20	.21	.21
Transportation Equipment, Excluding Motor Vehicles	.39	.09	.10	.09	.11
Stone, Clay and Glass Products	.49	.11	.12	.12	.14
Other Metal Working	1.42	.30	.36	.33	.42
Nondurable Goods Industries	7.52	1.59	1.88	1.90	2.15
Food and Beverages	.98	.23	.25	.25	.26
Textile Mill Products	.51	.12	.12	.12	.15
Paper and Allied Products	.72	.16	.17	.19	.19
Chemicals and Allied Products	1.65	.33	.42	.42	.47
Petroleum and Coal Products	2.78	.56	.70	.70	.82
Rubber Products	.22	.05	.05	.06	.06
Other Nondurable Goods	.66	.14	.17	.16	.20
MINING	.99	.21	.26	.24	.28
RAILROADS	.63	.17	.18	.15	.19
TRANSPORTATION, (Except RAIL)	1.88	.41	.48	.53	.47
PUBLIC UTILITIES	5.75	1.09	1.59	1.59	1.68
COMMUNICATIONS, COMMERCIAL AND OTHER	11.52	2.69	2.85	2.85	3.12
Total	$34.56	$7.57	$8.61	$8.80	$9.58

Source: SEC-Commerce

Latin America probably will be the more lucrative area for construction. Total outlays including modernization by U. S. manufacturers, are expected to hit $291 million next year, compared with anticipated spending this year of $269 million. Of the 1962 total, $150 million will go to new capacity.

U. S. contractors stand to obtain a generous chunk of this total. They can, however, expect to meet some stiff competition from British, French, and German contractors, many of whom obtain some form of subsidization from their own governments. And in some areas of Latin America, local companies can be expected to provide some competition.

Canada's share of total investment by U. S. manufacturers shows a downturn from this year and last year. Manufacturers plan spending of $289 million in Canada next year. This compares with $350 million this year and $384 million last year. Moreover, only 16% of the planned spending would go for new capacity and expansion. Modernization and replacement will claim the balance. This year, 44% of the $350 million worth of new investment will go to expansion and new capacity. Both Canadian and U. S. contractors will therefore feel the pinch next year.

to Dip 3%

Plans for domestic spending on new plant and equipment haven't changed since early in the year. The new SEC-Commerce report shows that industry plans outlays of $34.5 billion this year, about 3% less than actual investment last year.

Although businessmen actually spent less in the first half of this year than they had planned earlier, some of the decline will be offset in the second half.

Spending plans in the third and fourth quarters point up. The third-quarter annual rate of spending is now placed at $34.8 billion, up 4% from the second quarter's actual spending rate. And the annual rate of spending in the fourth quarter is expected to hit $35.9 billion, a 7% increase over the second-quarter rate of $33.5 billion.

Even though the questionnaires covering the bulk of major companies went out after President Kennedy's mobilization speech, the indicated spending plans appear to reflect more normal conditions. Government economists guess that executives decided their excess plant capacity calls for no sudden increases.

CUT WATER SUPPLY COSTS with REDA Submergible PUMPS

. . . and still obtain maximum water supply and maximum pressure for ALL your water needs. Here's Why:

1. QUALITY CRAFTSMANSHIP . . . Yet production line cost . . . A complete line of 2-pole and 4-pole models to meet operating heads and capacities required. Both electric, submergible motor and pump are REDA manufactured.

2. Oil lubricated motors require less power per H.P. PROVIDE MORE WATER PER DOLLAR than comparable units.

3. Low Installation and Operating Cost. No special piping needed, no drive shafts, rods, belts or gears or costly foundations are required. Operation is completely automatic with minimum controls required.

PUMP TYPE	UNIT O. D.	DESIGN CAPACITY GPM	DESIGN LIFT HEAD IN FEET	
			MAXIMUM	MINIMUM
D-47E	6"	55	2000	200
G-70E	6"	72	5400	180
G-120A	6"	110	3500	105
G-160	6"	150	2750	82
I-200	8"	210	2000	54
FR-300	8"	325	1250	54
J-400	8"	480	780	60

PUMP TYPE	UNIT O. D.	DESIGN CAPACITY GPM	DESIGN LIFT HEAD IN FEET	
			MAXIMUM	MINIMUM
GB-600	10"	600	600	60
KG-725	10"	800	490	69
N-500	10"	425	1100	30
N-750	11"	(c)600*	1000	30
		(a)700		
P-1000	12"	1200	1000	46
R-1500	14"	1800	700	65
T-2000	16"	2250	600	85

*(c) and (a) designate impeller cut within the same pump type.

Models Available from 1/3 to over 300 H.P. Call or Write for Industrial Bulletin R-432 and more complete information.

REDA PUMP COMPANY / BARTLESVILLE, OKLAHOMA

Manufacturer of Submergible, Electric Motors and Pumps for over 40 years. Pumps for Oil, Brine, Water, Gasoline, Jet Fuel, Chemicals, LPG

SIGN OF QUALITY SUBMERGIBLE REDA PUMPS

PHONE FE 6-7900

ALWAYS USE POSTAL ZONE NUMBERS

Without the zone number addresses are incomplete in 106 U. S. cities.

81 HYDRAULIC JACKS & PULLERS to choose from

Self-Contained STANDARD JACKS 1½ to 100 tons capacity.

Self-Contained CENTER-HOLE PULLERS 30 to 100 tons capacity.

SIMPLEX RE-MO-TROL UTIL-A-TOOL JACKS JENNY ROL-TOE

WRITE FOR CAT. H-60

TEMPLETON, KENLY & CO.

2553 Gardner Road Broadview, Illinois

August Volume Tops $2.2 Billion

Heavy construction contracts in August topped $2.2 billion; it was the first time since 1952 that an August total exceeded $2 billion.

On a weekly average basis, however, August recorded a seasonal decline of 6% from July and dropped 4% below the weekly pace of a year ago. Volume in the first eight months totaled $15 billion, 2% below the record year of 1960.

Although the pace of private contracts quickened in August, volume of $1,085 million fell short of matching public works projects worth $1,134 million.

Private contracts in August, however, rose 21% over July. Only bridges failed to show a gain over July. For the eight-month period, private contract awards of $7.3-billion lag behind last year by 11% due largely to continuing weakness in mass housing.

In contrast to the August pickup in private contracts, public works awards dropped 22% below July. State and municipal work fell 9% in August, while federal construction plunged 55% below July, which had large missile base awards, and 14% below a year ago. Despite the August decline, both state and municipal and federal construction categories maintained a generous spread over the first eight months of last year, although the federal gain of 6% at the end of August compares to 9% at the end of the first seven months.

More than $500 million worth of private housing went to contract in August, but the total fell 26% short of a year ago. Last month's volume, however, marked a 17% improvement over July. Hotel and apartment ventures were especially prominent in the month's new business.

Power, chemical and steel plants provided the push for a 70% rise in industrial building contracts, bringing August within 6% of a year ago. The margin of gain over 1960 for the January-August period, narrowed to 2%, compared to 4% at the end of the first seven months.

Commercial building contracts continued their climb to new records as office building shows little evidence of slackening. August contracts steamed along 56% faster than a year ago, chalking up $1.8 billion in awards of the first eight months. This is 9% above 1960's same period. At the end of the January-July period the gain was only 4%.

Highway contracts in August scored heavily with more than $400 million in awards, but on a weekly average basis, August showed up 6% slower than July. August's pace, however, rose 31% above one year ago, and the month's volume brought the cumulative eight-month total to $2.6 billion, 16% more than last year.

Bridge awards of $68 million appear small compared with August 1960, when the $122-million Chesapeake Bay Bridge-Tunnel project swelled both bridge and unclassified construction categories.

Sewerage and waterworks with August volume of $82 million and $47 million respectively, scored good gains over both July and August 1960. Sewerage construction heads for a record this year, with cumulative volume in the first eight months totaling $502 million, 25% above the same period last year.

Maryland Sets Expressway Bid Call for Next Month

Maryland will advertise in mid-October for construction bids on a five-mile toll-free section of the Northeast Expressway. Five contracts worth $7 million will be let by the Maryland State Roads Commission. With the exception of the five-mile section, the rest of the 43-mile route in Maryland will be a toll facility.

Maryland's section from the Baltimore Tunnel to the Delaware state line will cost about $90 million. This route, connecting with a similar new highway in Delaware, will extend to the Delaware Memorial Bridge, south of Wilmington.

The bi-state highway was originally planned as part of the Inter-state system.

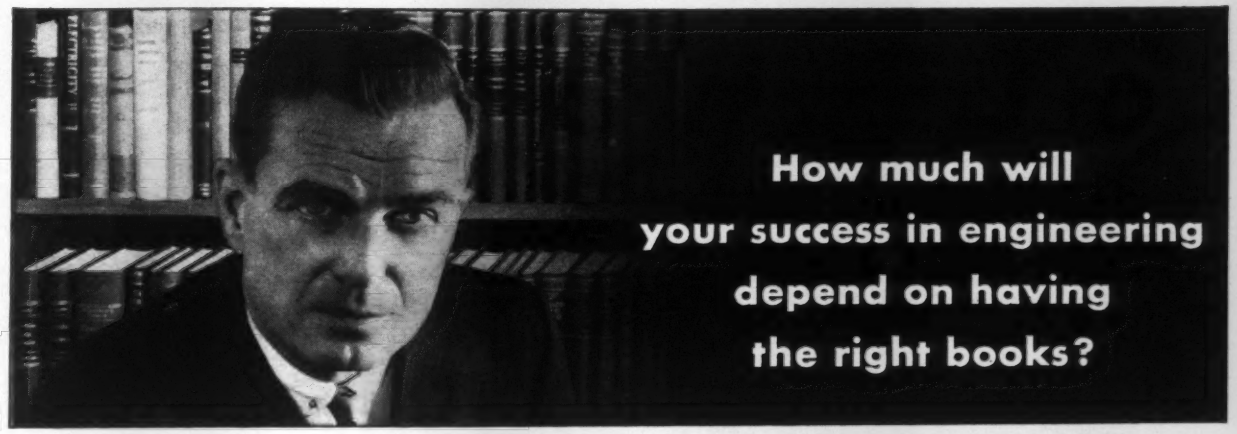
In the interest of quicker completion, Maryland and Delaware passed legislation eliminating the route from the federal-aid system, and authorizing its construction as a toll road.

Maryland's section will be completed by 1963.

Engineering Construction Contracts for August

	August, 1961								Eight Months			
	New England	Middle Atlantic	South	Mid-West	Mississippi to Rockies	Far West	Total U. S.	% Change '60 to '61 (Av. Wk.)	U. S. Cumulative 1961 (35 wks.)	1960 (34 wks.)	% Change '60 to '61 (Av. Wk.)	Canada August 1961
Public Works, Total	**57,866**	**207,917**	**229,402**	**170,703**	**258,692**	**209,378**	**1,133,958**	**+ 1**	**7,748,961**	**7,044,567**	**+ 7**	**69,647**
Waterworks	3,984	10,718	12,760	3,832	6,945	8,378	**46,617**	+46	**269,517**	313,481	−16	1,868
Sewerage	1,904	21,643	10,345	17,648	8,772	22,167	**82,479**	+84	**502,025**	391,555	+25	2,573
Bridges	325	16,131	23,494	10,687	13,178	4,221	**68,036**	−36	**449,969**	538,535	−19	6,777
Earthwork, waterways	2,064	7,398	6,741	1,105	14,863	18,091	**50,262**	−34	**577,083**	538,268	+ 4	7,270
Streets and roads	20,903	65,132	92,768	71,551	95,996	64,702	**411,052**	+31	**2,595,761**	2,169,379	+16	20,527
Buildings: Residential	7,900	9,660	36,926	6,952	3,483	12,098	**77,019**	−35	**584,291**	452,712	+25	.....
Other	14,280	62,648	31,865	43,995	39,583	63,667	**256,038**	+ 5	**1,826,807**	1,604,573	+11	24,391
Unclassified	6,506	14,587	14,503	14,933	75,872	16,054	**142,455**	−22	**943,508**	1,036,064	−12	6,241
State & Municipal	52,685	192,433	193,711	166,331	168,569	190,215	**953,944**	+ 5	**5,948,329**	5,390,939	+ 7	59,762
Federal	5,181	15,484	35,691	4,372	90,123	29,163	**180,014**	−14	**1,800,632**	1,653,628	+ 6	9,885
Private, Total	**59,692**	**304,928**	**198,533**	**142,570**	**238,547**	**141,729**	**1,085,999**	**−10**	**7,283,882**	**7,931,210**	**−11**	**184,890**
Bridges	.....	.....	163	.....	.....	.....	**163**	−89	**653**	2,686	−76	.....
Buildings: Industrial	11,036	41,880	74,512	46,693	54,336	27,916	**256,373**	− 6	**1,899,222**	1,804,425	+ 2	39,702
Mass housing	26,471	165,761	74,592	46,843	123,131	72,917	**509,715**	−26	**3,300,234**	3,917,713	−18	74,531
Commercial	21,628	97,287	39,896	40,363	46,611	35,398	**281,183**	+56	**1,787,684**	1,597,354	+ 9	26,254
Unclassified	557	.....	9,370	8,671	14,469	5,498	**38,565**	−42	**296,089**	609,032	−53	44,403
Total, Aug., 1961—5 wks.	**117,558**	**512,845**	**427,935**	**313,273**	**497,239**	**351,107**	**2,219,957**	**− 4**	.....	.....	.....	**254,537**
Total, July, 1961—4 wks.	89,012	393,933	304,455	306,564	429,322	359,744	**1,883,030**	.....	.....	.....	.....	136,793
Total, Aug., 1960—4 wks.	114,868	439,369	461,728	182,472	401,477	258,803	**1,858,717**	.....	.....	.....	.....	95,942
Eight mos., 1961 (35 wks.)	**728,144**	**3,421,521**	**2,588,050**	**2,294,422**	**3,387,347**	**2,613,359**	.....	.....	**15,032,843**	.....	**− 2**	**1,172,543**
Eight mos., 1960 (34 wks.)	914,969	3,580,104	2,410,705	2,247,282	3,399,591	2,423,126	.....	.....	.....	14,957,777	.....	1,263,892
% Change '60 to '61 (Av. wk.)	−23	−7	+4	−1	−3	+5	.....	.....	.....	.....	.....	−10

ENGINEERING NEWS-RECORD *reports U. S. (50 states) construction projects of the following minimum costs—Waterworks, excavation, drainage and irrigation, $53,000; other public works, $88,000; industrial buildings, $110,000; other buildings, $400,000.*



Now—A Civil Engineering Book Plan that helps you keep ahead in your field *at the lowest possible cost*

Start your membership with any of these selections:

Design of Steel Structures by E. H. and C. N. Gaylord. Covers both steel and aluminum structural members.
Publisher's Price, $9.00
Club Price, $7.65

Formulas for Stress and Strain by R. J. Roark. 3rd Ed. Brings you more than 300 formulas on strength of materials.
Publisher's Price, $8.50
Club Price, $7.25

Design and Construction of Asphalt Pavements by J. R. Martin and H. A. Wallace. Modern methods and technology.
Publisher's Price, $11.50
Club Price, $9.80

Handbook of Hydraulics by H. W. King and E. F. Brater. 4th Ed. Basic formulas and tables with practical applications.
Publisher's Price, $10.00
Club Price, $8.50

Estimating Construction Costs by R. L. Peurifoy. 2nd Ed. Techniques and data to help you make accurate estimates.
Publisher's Price, $11.50
Club Price, $9.80

Epoxy Resins by H. Lee and K. Neville. Fully treats their modern applications and technology.
Publisher's Price, $8.00
Club Price, $6.80

Modern Mathematics for the Engineer by E. F. Beckenbach. Gives valuable methods of analysis and calculation.
Publisher's Price, $9.25
Club Price, $7.85

Your engineering success owes a great deal to books. Why not take advantage of this convenient, economical way to have the best professional books available when you need them? THE CIVIL ENGINEERS' BOOK CLUB brings you the essential technical literature in your field. It also helps you overcome today's high cost of building a professional library *by saving you an average of 15% from publisher's prices.*

How the Club Operates. Eight times a year you receive free of charge *The Civil Engineers' Book Bulletin.* This gives you complete advance notice of the next main selection, as well as many alternate selections. If you want the main selection you do nothing; the book will be mailed to you. If you want an alternate selection—or no book at all for that period—you can notify the Club by returning the convenient card enclosed with each *Bulletin.*

Saves You Money and the Bother of Shopping. You agree only to the purchase of three books in a year. Certainly out of the large number of books in your field offered in any twelve months there will be at least three you will buy anyway. By joining the Club you save both money and the trouble of searching and shopping.

Send No Money Now. Just check the book you want as your first selection at the special Club price on the coupon below. With it you will be sent Preston's *Practical Prestressed Concrete* for only one dollar. Take advantage of this offer and receive two books for less than the regular price of one!

ACCEPT THIS
$11.50 BOOK
FOR ONLY $1.00
with membership in
The
Civil Engineers' Book Club

PRACTICAL PRESTRESSED CONCRETE
By H. Kent Preston

Engineer, Construction Materials, John A. Roebling's Sons Division, The Colorado Fuel and Iron Corporation

This book furnishes the busy structural engineer with easy-to-follow information on the design of safe, economical members and structures of prestressed concrete. Here you find basic principles, design procedures, and numerical examples presented in terms of simple arithmetic and standard stress and moment formulas. All design examples are based on *Tentative Recommendations for Prestressed Concrete* prepared by an ACI-ASCE committee of experts. The approach is practical, and several numerical design examples are carried through from beginning to end.

Practical Prestressed Concrete is typical of the selections of THE CIVIL ENGINEERS' BOOK CLUB. All books are chosen by qualified editors and consultants. Their thoroughgoing understanding of the standards and values of the literature in your field guarantees the authoritativeness of the selections.

NOTE: If you already own this volume you may substitute any other book on this page as your DOLLAR book. Check two books below and you will receive the higher priced selection for only $1.00.

CLIP AND MAIL THIS COUPON TODAY

The CIVIL ENGINEERS' BOOK CLUB, Dept. ENR-9-14
330 West 42nd Street, New York 36, N. Y.

Please enroll me as a member of The Civil Engineers' Book Club. You will bill me for my first selection indicated at right at the special club price and $1 for *Practical Prestressed Concrete*, plus few cents delivery costs. (The Club assumes this charge on prepaid orders.) Forthcoming selections will be described in advance and I may decline any book. I need take only 3 selections or alternates in 12 months of membership. **(This offer good in U.S. only.)**

PLEASE PRINT

Name .....

Address .....

City ..... **Zone** .... **State** .....

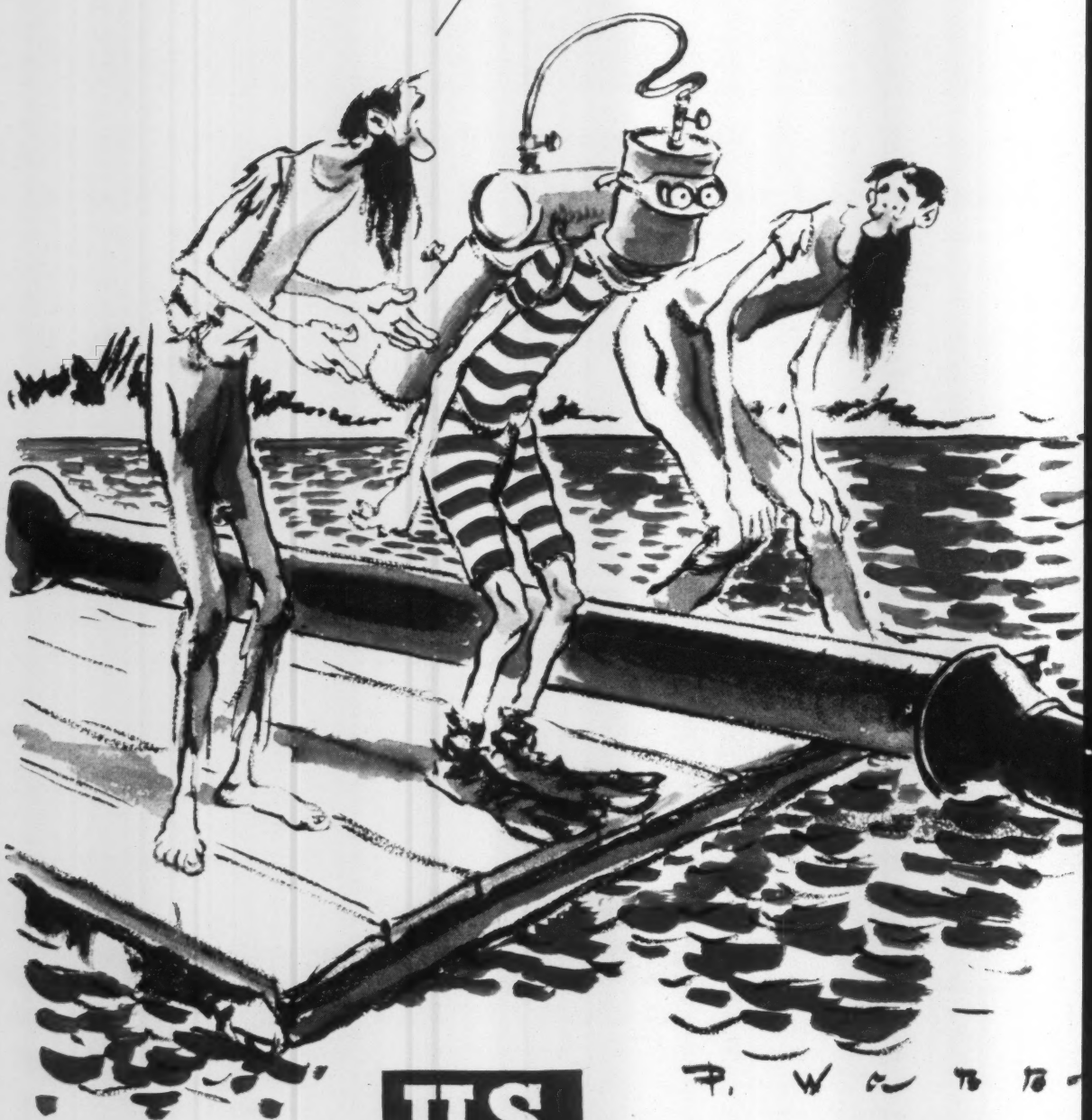
Company .....

NO RISK GUARANTEE: If not completely satisfied, you may return your first shipment within 10 days and your membership will be canceled. ENR-9-14

Send as my first selection:

- ☐ **Design of Steel Structures, $7.65**
- ☐ **Formulas for Stress and Strain, $7.25**
- ☐ **Design and Construction of Asphalt Pavements, $9.80**
- ☐ **Handbook of Hydraulics, $8.50**
- ☐ **Estimating Construction Costs, $9.80**
- ☐ **Epoxy Resins, $6.80**
- ☐ **Modern Mathematics for the Engineer, $7.85**

"All you're gonna do is
scare the fish cousin Ferd...
you ain't goin' to find
no leaks in them joints"



U.S. cast iron PIPE

FOR WATER, SEWERAGE AND

not a leak in a lakeful!

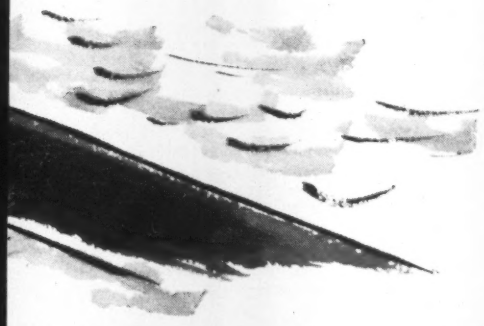
The joints on USIFLEX® Boltless Flexible Joint Pipe are bottle-tight. Joint is made up with a moderate thrust to move ball past self-sealing gasket in socket. Rugged retainer ring locks joint against pull-out during installation and in service. And no wrenches, bolts or nuts to worry about.

Underwater jobs are never easy. But Usiflex simplicity speed and ease of handling make them almost a pleasure. Want to cut costs, save time and labor next time you have a tough underwater job? Call or write today for illustrated technical brochure on Usiflex.

U. S. PIPE AND FOUNDRY COMPANY
General Office: Birmingham 2, Alabama

A Wholly Integrated Producer from Mines and Blast Furnaces to Finished Pipe.

Makers of TYTON JOINT® Pipe.

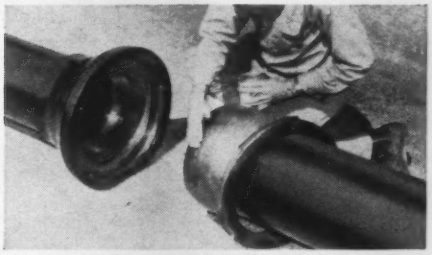


USIFLEX®
BOLTLESS FLEXIBLE JOINT* PIPE

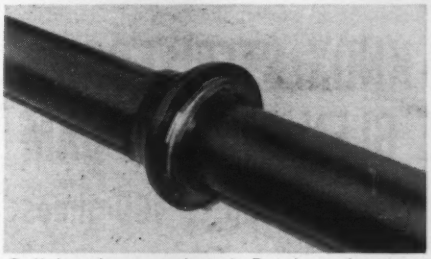
*U. S. Patent No. 2,564,938

INDUSTRIAL SERVICE CAST IRON®

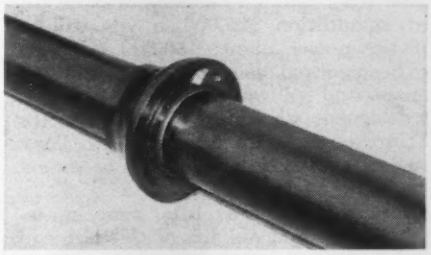
1 Insert the gasket in its seat in the socket. Forming gasket loop helps initial stage of seating. Release of loop allows gasket to spring into the gasket seat where it is securely held.



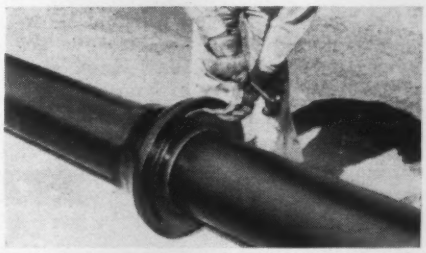
2 Apply special Usiflex lubricant to the ball and inside surface of seated gasket in socket. After lubrication, ball is ready to be pushed into socket.



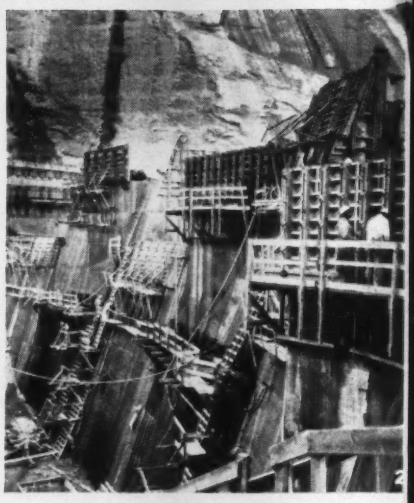
3 Ball has been socketed. Retainer ring lugs have been lined up with recesses in bell and retainer ring is ready to be moved into the bell and rotated.

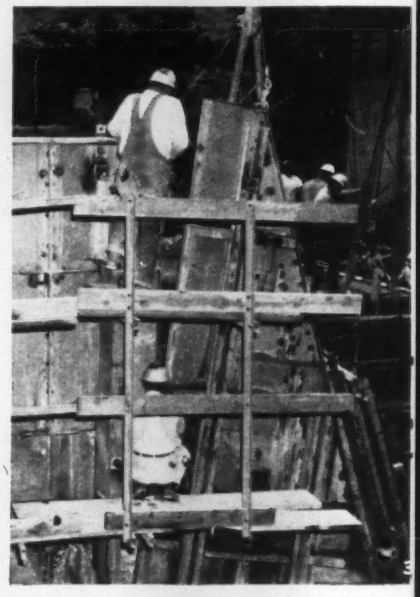


4 After insertion and rotation of retainer ring in bell, the lugs on retainer ring are in back of and in register with internal flange segments in bell. Lead lock is partially inserted into recess between the bell and retainer ring.



5 Lead lock completely inserted in recess is being caulked in place by hammer blows on a wide caulking iron.





BLAW-KNOX STEEL FORMS SHAPE GLEN CANYON DAM

re-used up to 100 times

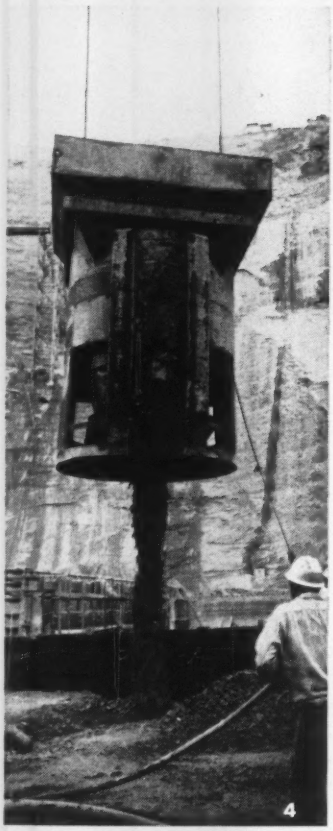
The $108 million Glen Canyon Dam, being constructed by Merritt-Chapman and Scott Corporation of New York, uses Blaw-Knox heavy steel forms to shape the 5 million cu. yds. of concrete being poured. In addition, 225,000 cu. yds. will be required for the power plant; 150,000 cu. yds. already have been poured, using Blaw-Knox forms, for the diversion and spillway tunnels.

Specially designed, steel, cantilever forms are used on this third-largest dam in the country. They will be re-used up to 100 times and thus become a major cost-reducing factor.

Concrete is poured in 7½-ft. lifts, many measuring 70 by 170 feet, and one lift of this size can be poured in eight hours using Blaw-Knox 12 cu. yd., hydraulically operated concrete buckets.

The forms are stripped and raised in as little as four hours, and nearly 2 miles of these will be used.

Wherever the big jobs are, you will find Blaw-Knox heavy steel forms being used to give the shape of things to come. Call Blaw-Knox steel forms consultation service early in your planning for important engineering help. Blaw-Knox Company, Pittsburgh 38, Pa., phone Sterling 1-2700.



1. This panoramic view shows the many Blaw-Knox steel forms being used during concrete placement on the upstream and downstream faces of the dam and the powerhouse foundation.

2. This view of the downstream face of the dam shows how Blaw-Knox steel forms are used in 7½-foot lifts.

3. Final bolts are tightened on a 70-foot form section on the upstream face of a lift while other workmen prepare to raise the key form on the transverse construction joint side. 1½-inch diameter bolts are removed from anchors after concrete has set. Forms then are stripped and raised into position for the next lift.

4. Four special, self-powered, hydraulically operated Blaw-Knox concrete buckets of 12 cu. yds. capacity are used to pour the concrete. Each bucket has a roller gate opening 4 feet by 4 feet and can be stopped in any position. Permits dribbling of concrete. These are the largest buckets in the world of this type. Concrete is moved from a 20-story high batch plant via cableway.

BLAW-KNOX

Steel Forms

BLAW-KNOX

Blaw-Knox designs and manufactures for America's growth industries: METALS: Rolling Mills • Steel Processing Lines • Rolls • Castings • Open Hearth Specialties • PROCESSING: Process Design, Engineering and Plant Construction Services • Process Equipment and Pressure Piping • CONSTRUCTION: Concrete and Bituminous Paving Machines • Concrete Batching Plants and Forms • Gratings • AEROSPACE: Fixed and Steerable Antennas • Radio Telescopes • Towers and Special Structures • POWER: Power Plant Specialties and Valves

Local Autonomy Plagues Union Leaders

It's necessary to keep union democracy alive, but it makes top-level policy hard to implement at times

Labor leaders trying to improve construction's labor relations nationwide frequently find too many cooks at work on the broth at the local level.

Four times in as many weeks, the principle of local autonomy has been raised at the national level to explain the wide gap between national intent and local practice.

Noncompliance with their no-strike pledges, racial discrimination, local objections to national labor agreements and the persistent failure of the AFL-CIO to solve the jurisdictional conflict between craft and industrial unions, for example, have been described as some of the by-products of local autonomy.

Two weeks ago, C. J. Haggerty, president of the AFL-CIO Building and Construction Trades Department, told members of Congress that "our problems are very real." He pointed out that a democratic labor movement, by its very nature, makes it difficult to translate policy formed at the national level into acceptance or compliance at the local level.

Although such explanations neither justify nor solve many of the troublesome labor problems that exist, they help to give a better perspective to a few of the chronic ones, and tend to prick the bubble of those who think the AFL-CIO may splinter apart this December.

The scope of the problem is dramatized by the fact that the AFL-CIO's constitution guarantees the "integrity," or autonomy, of each of its 133 affiliates, which are, in turn, made up of autonomous or self-governing, local units. In the building trades group alone, there are 18 international unions, 33 state councils, 531 local councils and over 12,000 relatively free-wheeling local unions, representing about 3.25 million construction workers.

The rights of these workers as union members are now protected. The Landrum-Griffin law, in an effort to promote union democracy, makes violation of those rights by any labor organization a federal offense.

"It must also be realized that the legal and psychological impact of the Landrum-Griffin law has tended to weaken such disciplinary powers as the international unions may have," Mr. Haggerty said. "Local unions have gotten the impression that they now have complete autonomy and need not respond to national policies," he added.

• **Unauthorized strikes**—Mr. Haggerty referred specifically to a Baltimore (Md.) electrical workers' strike that has been going on since June 19. He called it an illustration "of the strongly retarding effect of the new legislation on the powers of an international union which is seeking to enforce its constitutional prohibitions against an unauthorized strike."

The significance of the strike is twofold. The Baltimore local (No. 28) not only got out from under the electrical industry's voluntary machinery for the peaceful settlement of labor disputes by lawfully terminating its old labor contract, but it also refuses to subscribe to the no-strike machinery in the new contract that has to be negotiated. It has struck in defiance of its international's refusal to authorize the strike, and it has refused to comply with the international's request that the contract dispute be submitted for arbitration by the industry's Council on Industrial Relations. In the first court case over the hassle, the court supported the local and commented that "Congress has not yet adopted a policy of compulsory arbitration."

In the absence of any enforcement power of its own—which is a situation characteristic of voluntarism in the construction industry—the international has had to take the extreme action of revoking the local's charter and of chartering a new local (No. 24). But this action has not ended the strike.

Local 28, unwilling to surrender its jurisdiction, has challenged the charter revocation in federal court and is trying to retain its representation rights by seeking National Labor Relations Board certification as an independent union. It claims to have the support of over three-fourths of its 1,200 members.

• **Discrimination**—Mr. Haggerty used this illustration of autonomy in explaining to a Congressional subcommittee why racial discrimination, where it exists in the building trades, exists in defiance of the policy of his department and in violation of the AFL-CIO constitution.

Quoting AFL-CIO President George Meany, Mr. Haggerty said that "we can't dictate in a good cause, any more than we can dictate in what the newspapers might consider to be a bad cause. . . ."

Mr. Meany, who is strongly opposed to racial discrimination in trade unionism, told the same subcommittee that the AFL-CIO is not "a monolithic organization, with dictatorial powers over union members and over the labor movement as a whole."

"The AFL-CIO is a voluntary federation of autonomous national and international unions," he said. "We do not and cannot control their internal operations. We have no disciplinary power over them except suspension or expulsion from the federation for specific constitutional violations. Moreover, the power of these national and international unions over their own local affiliates is far from absolute—nor should it be in a democracy. Local unions do resist and, sometimes, even reject policies laid down by the parent organization."

On another occasion, however, Mr. Meany has said that on matters of national emergency or importance, such as no-strike policies and discrimination, "local option" should and must give way to national leadership and the "well-considered decisions of the international union officers."

• **National agreements**—Another example of local union resistance to national decisions has just occurred at the convention of the plumbers union. The issue was national labor agreements negotiated with national contractors by international union officers.

From the union viewpoint, the agreements, which generally protect local conditions, have helped promote unionization, provided jobs and protected jurisdiction. For the contractors who traditionally move about the country, they have provided a nationwide framework of sufficiently uniform labor conditions to permit feasible operations. The construction agreement has also provided a large International Training Fund that benefits the entire industry.

Although the plumbers' national agreements were vigorously defended by the union's general officers and by many local unions, there were, for the first time, 10 resolutions condemning the agreements in whole or in part.

The burden of the complaints was that the agreements "have seriously im-

periled the autonomy of local unions." Some of the opposition demanded a voice in the negotiation of the agreements; others insisted on full protection of all local conditions; one group sought veto power over the agreements.

The upshot was that the resolutions were referred to the general officers for "study and consideration."

• **Jurisdictional disputes** – What gives the issue of autonomy its emotional impact is its close alliance with the protection of work jurisdiction. And this is why the AFL-CIO is still having trouble with the jurisdictional conflict between craft and industrial unions.

Peter T. Schoemann, president of the plumbers union, pointed out at the convention that the trade union movement is "free and voluntary" and based on the concept of local autonomy. The first object of any union, he said, is protection of work jurisdiction—which, he explained, means "bread and butter."

Unions should be permitted to guard their jurisdiction, he suggested, just as zealously as doctors, lawyers and accountants, or the Army, Navy and Air Force, guard theirs.

Mr. Schoemann said he does not believe that a "monolithic labor movement is necessary."

"The labor movement does not have to be a perfect unity, 100% free of all internal friction," he explained, "in order to work for those economic and political goals which are possible and appropriate to 133 separate organizations composed of as many separate categories of employees. It does not have to be a solid block of concrete."

Mr. Schoemann said, "We are not unhappy with the labor merger." He warned that he would bend every effort to "preserve and maintain" his union's jurisdiction, but said he is not opposed to settlement of craft-industrial union differences by arbitration "provided there are sufficient safeguards of our work jurisdiction."

Trial Examiner Calls Lockout Legal

The right of contractors to engage in lockouts during collective bargaining may soon be clarified as the result of a decision that has been handed down by a National Labor Relations Board trial examiner.

In an intermediate report, trial examiner Lee J. Best has ruled that a lockout of operating engineers by members of two contractor association and by several non-member contractors during a 1960 labor dispute was lawful.

"There are special circumstances where the right of employees to engage in collective bargaining is not absolute but must be balanced against the employer's right to protect his business against loss," said Mr. Best. Lockouts are permissible, he explained, to safeguard against unusual operational problems or hazards or economic loss where there is reasonable ground for believing that a strike is imminent.

The lockout that Mr. Best considered legal occurred in a nine-county area of northwestern Illinois. It involved the Building Contractors Association of Rockford, whose members engage in commercial, industrial, institutional and residential construction work, and the Northwestern Illinois Contractors Association, which is made up of general contractors and subcontractors engaged in road, bridge and highway construction.

The two associations held jointly negotiated labor contracts with Local 150 of the operating engineers. Before the contracts expired on April 30, 1960, the union had demanded a 45-cent wage increase spread over two years.

Fruitless negotiations for a new contract continued throughout the spring. The union, which required the submission of all proposals to a membership vote, rejected a three-year, 35-cent offer by the contractors. It refused to give any assurance against a strike or to extend the old contracts.

On May 16, members of both contractor associations, after prior notice to the union, suspended all operations requiring the employment of operating engineers. The employers took the position that they were "obviously faced with a work stoppage at any moment." They said they could not bid on new work under the circumstances, or give owners any assurance on completion dates, or start new jobs on which the owners required uninterrupted work.

They also claimed that "a work stoppage which occurs on a construction project once in progress submits the contractor to a serious economic loss and threatens the lives, safety and the welfare of the public."

The contractors made it clear, however, that the lockout was not intended as a discharge and that the workers would be recalled as soon as a new contract was concluded.

Bargaining continued during the lockout. On July 1, the union agreed not to strike before August 1. The contractors called off the lockout and resumed operations on July 5. The dispute was settled July 18 on the basis of a three-year, 55-cent contract.

An unfair labor practice complaint was issued against the contractors. The legal question was whether the lockout was illegal on the ground that it amounted to discrimination in employment designed to discourage membership in the union, or because it interfered with the right of workers to organize.

Mr. Best recommended that the complaint be dismissed on both counts. He found no indication of discrimination. And he found no unlawful interference with the union rights of the workers.

There was ample evidence, Mr. Best said, to justify the contractors' apprehensions that a strike was imminent and to support the validity of the contractors' economic reasons for calling the lockout. The "special circumstances" that make a lockout permissible, he concluded, did exist.

In a paranethetical comment on the union's insistence that all contractor proposals be submitted to a union membership vote, Mr. Best said: "No employer, however astute, can bargain with a ballot box." He found that this action by the union caused a deadlock in the negotiations and that the action was "incompatible with the definitions and principles of collective bargaining."

Engineering Union Leader Joins Staff of AFL-CIO

Charles Hall, president of The Engineers Association at Sperry Gyroscope Co., has been appointed director of the Engineering Department of the AFL-CIO's Industrial Union Department, effective September 18.

Mr. Hall, whose new headquarters will be in the AFL-CIO building in Washington, D. C., has been closely associated for many years with a nationwide effort to form an effective national federation of engineering unions.

He was provisional president of the Engineers and Scientists Guild until his own union, EA, joined the mainstream of organized labor by affiliating with the International Union of Electrical Workers, AFL-CIO. That affiliation occurred after the IUE agreed to the formation of Engineering Councils within its own framework.

Commenting on his departure from EA, Mr. Hall said he hoped he could help create within the IUD an organization that would be attractive to engineering employees.

Labor in Brief . . .

• **A familiar ring**—The British Trades Union Congress last week rejected a government plea for a wage freeze and said: "The Congress refuses to accept the Chancellor's appeal for wage restraint, and is bound to state that such appeals will only receive realistic response when it is apparent that there is to be equality of sacrifice by all sections of the community."

• **Wage dispute**—Nearly 4,500 plumbers and pipefitters in the Pacific Northwest struck August 28 in support of a union demand for a 25-cent wage increase for each of the next two years. The union agreed not to strike work on the Seattle World's Fair and on defense installations.

• **Work restrictions**—Opposing contractor demands for unrestricted use of rollers and sprayers, painters in Louisville, Ky., went on strike last week. The union is afraid there will be less work for its members if the contractors' demand is granted. The painters, now getting $3.372½ an hour, are seeking a 25-cent pay boost.

• **Wages and steel prices**—President Kennedy said last week that his advisers have informed him that the steel companies can absorb the steel wage increase due October 1 "without increasing prices" and still make a "good profit." He said he was concerned that a price increase would set off another inflationary spiral, make us less competitive abroad, slow down our recovery and affect our balance of payments.

• **Roadblocked**—In an effort to clear the decks for adjournment, the House Rules Committee last week bottled up two Administration Labor bills—one to tighten up the 1958 Welfare and Pension Fund Disclosure Act and the other to provide retraining benefits for jobless workers. Both bills will now go over to the next session (see also p. 21).

• **Labor merger**—The AFL-CIO will complete the last of its state mergers on September 25, when the New Jersey AFL and CIO state central labor bodies will become a united federation. It took nearly six years to reach agreement on the merger.

• **Trouble forestalled**—In an effort to eliminate labor disputes that plague expositions, the Detroit Building Trades and Carpenters Joint Council signed an agreement setting up ground rules for installing and dismantling exhibits at the exposition of the American Foundrymen's Society to be held in Cobo Hall next May.

• **Failed as publicity picketing**—In granting an injunction against the picketing of an apartment house project by a laborers local in Providence, R. I., the court rejected a union claim that it was merely informing the public about the contractor's nonunion status. It is more than a coincidence, the court said, that the local has picketed the company off and on since 1959 to compel unionization of its workers.

Davis-Bacon Repeal Is Urged

The Davis-Bacon "watchdog panel" of the U. S. Chamber of Commerce last week issued its first report on what it calls the U. S. Labor Department's improper administration of the prevailing wage law.

Referring to wage determinations in two situations, the panel said:

• On July 3, the Department set prevailing wages for the $56-million South Dakota Minuteman Project. The wages ranged from $1.91 to $2.50. Although these were the "prevailing wages," the Department upped the rates on July 21 to a range of $2.83-$3.00. The Chamber's panel asks: Why this "sudden push" to higher minimums?

• The Labor Department, over the protest of the contractors involved, has classified the construction of a powerhouse at the Greers Ferry hydroelectric project in Heber Springs, Ark., as "commercial" construction and as requiring higher rates than those for "heavy" construction. At the same time, it has issued wage determinations that exceed "prevailing" wages in some cases and fall below them in others. The Chamber's panel claims the Labor Department cannot explain why.

The Chamber says these cases highlight its contention that the Department does not administer the law properly. It urges that the Davis-Bacon Act be repealed.

OFFICIAL PROPOSALS

Bids: October 19, 1961

The Port of New York Authority
Outerbridge Crossing

RE-ADVERTISEMENT
ROADWAY WIDENING
CONTRACT AK-140.001

Sealed proposals for the sale of materials and performance of Work for the widening of the roadway of the Outerbridge Crossing between Staten Island and New Jersey will be received at the office of the Chief Engineer of the Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Thursday, October 19, 1961, at which time said proposals will be opened and read in Room No. 1108.

Contract documents may be seen at the Office of the Assistant Chief Engineer for Design of the Authority, Room 1115. Documents will be furnished upon deposit of $50.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $50.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract directly to the Authority will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
S. Sloan Colt, Chairman

New York, September 14, 1961

Bids: October 5, 1961

The Port of New York Authority
New York International Airport

ADDITIONS TO PROPRIETARY FIRE ALARM SYSTEM
CONTRACT NYA-110.018

Sealed proposals for the sale of materials and performance of Work for construction of additions to the Proprietary Fire Alarm System at New York International Airport will be received at the office of the Chief Engineer of The Port of New York Authority, Room 1100, 111 Eighth Avenue, New York 11, N. Y., until 2:30 P.M. on Thursday, October 5, 1961, at which time said proposals will be opened and read in Room No. 1108.

Contract documents may be seen at the Office of the Assistant Chief Engineer for Design of the Authority, Room 1115. Documents will be furnished upon deposit of $30.00 per set for not more than three sets to any one company (each set including one copy of the contract drawings). Additional sets will be furnished upon payment of $30.00 per set, which payment is not returnable. Deposits and payments shall be delivered to the Treasury Department, Room 1001, where a receipt will be issued. The receipt shall be delivered to Room 1115, where the documents will be furnished.

Those who have submitted a bid on the contract directly to the Authority will receive a refund of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals. Those who have not submitted a bid will receive a refund of one-half of the deposit for each set of documents, not exceeding three, returned within forty days after the opening of proposals.

THE PORT OF NEW YORK AUTHORITY
S. Sloan Colt, Chairman

New York, September 14, 1961

Read the Official Proposal Columns of ENGINEERING NEWS-RECORD This Week and Every Week

OFFICIAL PROPOSALS

RATE: The rate for Official Proposal advertising is $2.70 per line or fraction set solid. Where the advertisement is set other than solid, the space is measured by total space occupied and charged on basis of 12 lines to the inch.

CLOSING DATE: Friday 10:30 A.M. for issue dated the following Thursday.

SEND COPY TO: Official Proposal Division, Engineering News-Record Class. Adv. Div., P. O. Box 12, N. Y. 36, N. Y.

Bids: October 5, 1961

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.,—Pursuant to the provisions of the Highway Law, and Canal Law, Article 2, Title 9 of the Public Authorities Law, and special provisions for projects financed with Federal Aid Funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time, on the 5th day of October 1961, by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects:

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1, F. J. FULLER, District Engineer, 353 Broadway, Albany 1, New York						
Albany (Int. Trg. Rte. 87)	FIM 61-5	Interstate Route 502 (FISH 57-17, Albany to Latham) (Bridges over Central Ave.) Project I-87-3(48)	0.04	Experimental Glass Fiber Reinforced Resin Wearing Surface on Bridge Pavement	$3,500 Plans $5	$63,300
Saratoga (Rte. 67)	FARC 61-139	Ballston Spa-Scotch Church, Pt. 2, S.H. 5542 Project S-382(4)	4.29	Asphalt Concrete	$35,000 Plans $5	641,000
Saratoga (Rte. 67)	FARC 61-81	Scotch Church-Blue Corners, S.H. 817 Project S-382(3)	3.47	Asphalt Concrete 3.46 Mi.; Misc. Work 0.01 Mi.	$34,000 Plans $5	577,000
Saratoga (Rte. 197)	FASSH 61-19 FARC 61-141	Moreau-Reynolds Corners Reynolds Corners-Fort Edward, S.H. 1748 Project S-401(2)	3.61	Asphalt Concrete 3.60 Mi. Misc. Work 0.01 Mi.	$32,000 Plans $5	573,000
Warren (Rtes. 8 & 9)	RC 61-138	Riverside-Chestertown, S.H. 691 Loon Lake-Pottersville-Taylors, S.H. 692	6.66	Asphalt Concrete	$22,000 Plans $5	365,000
Washington	M 61-13	Canal Bridges in the Towns of Fort Ann & Fort Edward	....	Painting Undersides of 6 Canal Bridges	$260 No Plans $5 for 2 Proposals	5,000
DISTRICT No. 2, L. KETCHUM, District Engineer, 109 No. Genesee Street, Utica 1, New York						
Montgomery	M 61-12	Dam 6, Lock 10E West of Pattersonville	....	Rehabilitation of Protecting Apron	$11,000 Plans $5	215,000
Oneida	M 61-11	Schuyler St. Bridge (E-45) Over Erie Canal 1½ Miles West of Utica	....	Removal of Steel Superstructure	$220 Plans $5	4,000
DISTRICT No. 3, E. E. TOWLSON, District Engineer, 333 E. Washington Street, Syracuse, New York						
Onondaga (Rtes. 80, 91)	FARC 61-140	Vesper-Tully, S.H. 1070; Tully-Apulia, S.H. 489; Tully-Onondaga Castle, Pt. 2, S.H. 489; LaFayette-Tully, S.H. 5516; Fabius-Apulia, Pt. 3, S.H. 121; Fabius-Apulia, Pt. 1, S.H. 49; Fabius-Apulia, Pt. 2, S.H. 75; Fabius Road, S.H. 554; Fabius Village, S.H. 1043 Project F-549(3)	9.48	Asphalt Concrete Type 1A	$40,000 Plans $5	730,000
Oswego (Rte. 104A)	FARC 61-142	Sterling-Oswego, Pt. 2, S.H. 1046 Project F-535(3)	2.66	Asphalt Concrete Type 1A; Twin Closed Box Culvert 39.06'	$27,000 Plans $5	497,000
Seneca	FASSH 61-16	Magee-Halsey Corners (Old State Road) Project S-591(1)	4.16	9" Cement Concrete Pavt. 24' Wide	$57,000 Plans $5	1,027,000
Tompkins (Rte. 13)	FAC 61-18 FASH 61-18	City of Ithaca: North East Arterial Highway (Rosemary Lane-East City Line) Ithaca-Etna Project U-F-1144(2)	6.70 (2.38 Acc.)	9" Cem. Conc. Pavt., 2 @ 24', 3.34 Mi.; 9" Cem. Con. Pavt., 24', 3.35 Mi.; Acc. Cem. Conc. Pavt., 1.13 Mi.; Acc. Asph. Conc. 1.25 Mi.; Misc. Work 0.01 Mi.; 3 HGS 240', 226', 199'; 1 Br. 137'—All Comp.	$235,000 Plans $10	4,272,000
DISTRICT No. 4, B. F. PERRY, District Engineer, Barge Canal Terminal, Rochester 1, New York						
Livingston (Rte. 5)	RC 61-151	Caledonia-Avon, S.H. 5273 Avon-Lima, S.H. 5302	0.06	Bridge Repairs	$3,000 Plans $5	55,000
Monroe (Int. Trg. Rte. 490)	FITL 61-1	Interstate Route Connection 580; Rochester-Bushnell Basin, Pts. 1 & 2; FASH 54-1, FISH 56-9 Project I-490-2(10)	6.53	Electrical Lighting Facilities	$12,000 Plans $5	225,000
Monroe (Rte. 251 & 383)	FARC 61-146	Scottsville-Mumford, S.H. 5046 Scottsville-Chili, S.H. 5279 Project S-517(1)	6.49 (0.78 Acc.)	Asph. Concrete 7.27 Mi.; Repairing & Painting Bridge, Repairing Culverts	$45,000 Plans $5	814,000
Wyoming (Rte. 78)	FARC 61-143	Java Center-Java Village, S.H. 894; Java Village-Wales, S.H. 976A; Java Village-Wales, S.H. 976 Project F-1158(1)	3.63 (0.09 Acc.)	Asph. Conc. 3.56 Mi.; Misc. Work 0.16 Mi.; Repairs to Br. #1	$45,000 Plans $5	807,000
DISTRICT No. 5, E. G. H. YOUNGMANN, District Engineer, State Office Bldg., 65 Court St., Buffalo 2, New York						
Erie	FASS 61-10 FISS 61-11	Maple Rd. Extension (CR 192) & the Separation of Grades of Maple Road Extension (CR 192) with Powerline Expressway & Lehigh Valley R.R. Project S-250(3)	1.74	Asph. Conc. 1.74 Mi.; HGS Comp. I Beam, 4 Sps. 251'; RRGS Comp. I Beam, 3 Sps. 178'; 2 Reinf. Conc. Twin Box Culverts	$95,000 Plans $5	1,725,000
DISTRICT No. 6, W. J. DENNIS, District Engineer, State Office Bldg., 30 West Main St., Hornell, New York						
Allegany (Rte. 17)	FARC 61-144	Genesee-Portville, S.H. 1322 Project F-421(9)	5.36	9" Cement Conc. Pavt. 24' Wide	$84,000 Plans $5	1,526,000
Allegany (Rte. 408, 305)	FATC 61-4	Cuba-Friendship, S.H. 5174; Obi-Cuba, S.H. 965 Project F-294(3)		Traffic Signal	$1,200 Plans $5	21,000
Yates (Rte. 14A)	FARC 61-145	Penn Yan-Halls Corners, S.H. 5323 Project F-146(4)	3.12	Asph. Conc. 3.08 Mi.; Misc. Work 0.04 Mi.	$15,000 Plans $5	279,000
DISTRICT No. 8, M. N. SINACORI, District Engineer, Pleasant Valley Road, Poughkeepsie, New York						
Rockland	PIP 61-1	Palisades Int. Pkwy., Sec. 2 Palisades Int. Pkwy., Part 1	15.36	Aluminum Chain Link Fencing, 4' & 5' High	$8,000 Plans $5	152,000
Westchester (Int. Trg. Rte. 95)	FINET 61-2	Interstate Rte. 501 N. Y. State Thruway, New England Section (Subdivisions 2, 3, 4, and 5) Project I-95-2(11)	9.94	Roadway, Guide Rail and Drainage Improvement	$3,700 Plans $5	68,000
DISTRICT No. 9, J. C. FREDERICK, District Engineer, 71 Frederick St., Binghamton, New York						
Broome (Rte. 17)	FATS 61-22	Windsor-Deposit, S.H. 5338 Project F-344(29)	9.34 (3.09 Acc.)	Traffic Signs and Delineators	$2,000 Plans $5	34,000
DISTRICT No. 10, A. M. SARR, District Engineer, 325 W. Main Street, Babylon, L. I., New York						
Bronx (Int. Trg. Rte. 95)	FINETC 61-1	Int. Rte. Connection 511 N. Y. State Thruway, New England Section (Westchester Ave. to N. Y. C. Line) Cont. 6 Project I-95-1(45)	3.54	Misc. (Grading, Asph. Pavt., Stone Masonry, Curbs, Drainage, Bridge Repairs	$2,000 Plans $5	36,000

(Continued on opposite page)

OFFICIAL PROPOSALS

(Continued from opposite page)

OFFICIAL PROPOSALS

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
Nassau	PSC 10324	Elim. of Grade Xings of the L. I. R. R. with Various Streets in Hicksville (Main Line-Port Jefferson Division)	3.32 (0.53 Acc.)	Track Reloc., RR Sta. and Misc. 3.32 Mi.; Cem. Conc. Pavt. 0.16 Mi.; Asph. Conc. 0.37 Mi.; 8 R.R. Gr. Seps. Pl. Girder; 1 Viaduct Reinf. Conc., I-Beam and Girder	$563,000 Plans $10	10,243,000
New York (Int. Trg. Rte. 478)	FILME 61-2	Int. Rte. Conn. 513 Lower Man. Expwy., Contract 2A (Canal St. to Manhattan Bridge) Project I-478-1(66)	0.15	East Ramp Man. Bridge, Cem. Conc. Pavt. 0.09 Mi.; Asph. Conc. 0.02 Mi.; Misc. Work 0.04 Mi.	$62,000 Plans $5	1,058,000
Queens (Int. Trg. Rte. 495)	FAVWE 61-3 FIHHE 61-1	Van Wyck Expwy. Extension, Contract 2 (57th Rd. to Rodman St.) Int. Rte. Conn. 514 Horace Harding Expwy. (Gr. Cent. Pkwy. Interchange to Van Wyck Expwy. Interchange) Project U-1085(21), I-495-1(49)	0.88 (2.77 Acc.)	8" & 9" Cem. Conc. Pavt. 2 @ 48' Var. = 2.55 Mi. Asph. Conc. = 1.02 Mi.; Misc. Work = 0.04 Mi.; Main Line Viad. 40 Sps. Comp., I-Beam 3029'; 4 Ramps 77 Sps. Comp. I-Beam 5822'; 1 Ramp Reinf. Conc. Slab 22 Sps. 440', Reinf. Conc. Box Sewer 365'	$670,000 Plans $10	12,222,000
Queens (Int. Trg. Rte. 678)	FIWE 61-1	Int. Rte. Conn. 515 Whitestone Expwy., Cont. 1 (Flushing River Bridge to Whitestone Bridge) Project EI-678-1(64)	1.95 (2.66 Acc.)	Asph. Conc. 4.19 Mi. 9" Cem. Conc. Pavt. 0.12 Mi.; Misc. Work 0.30 Mi.; HGS. Conc. Arch 2 Sps. 146' HGS. Comp I-Beam 2 Sps. 158'; HGS. Comp I-Beam and Prestressed Conc. 1323'	$530,000 Plans $10	9,676,000
Queens	FAGCP 61-3	Grand Central Pky., Sect. 3, Contract 2 (150th St. to 172nd St.) Project U-629(20)	0.91 (1.62 Acc.)	8" Cem. Conc. Pavt. 0.87 Mi. Asph. Conc. 1.54 Mi.; Misc. Work 0.12 Mi.; 3 HGS. Welded Comp. Beam 101', 100', 100'	$425,000 Plans $5	7,781,000
Queens	FAGCP 61-4	Grand Central Pky., Sect. 3, Cont. 3A, (172nd St. to Clearview Expy.) Proj. U-629(21)	2.14 (2.07 Acc.)	8" Cem. Conc. Pavt. 3.08 Mi. Asph. Conc. 0.90 Mi.; Misc. Work 0.23 Mi.; Widen 2 HGS. Conc. Rig Fr. 1 @ 63.5' Sp.; 1 @ 108.75' Sp.; 2 HGS. Comp I-Beam; 2 Sp. 163' Tot.; 4 Sp. 188.3' Tot.	$270,000 Plans $10	4,917,000
Suffolk	HSP 61-1	Heckscher State Pkwy. Cont. 6 (Sunrise Highway to Heckscher State Park)	6.23	Roadside Improvement	$18,000 Plans $5	318,000

Any projects in this letting that are on the Federal Aid highway systems are subject to the provisions of the "Federal Aid Highway Act. of 1956", being Public Law 627, 84th Congress, approved June 29, 1956, and are also subject to the applicable New York State statutes.

In compliance with the provisions of Section 115 (Prevailing Rate of Wage), Public Law 627, the minimum wages to be paid laborers and mechanics are included in wage schedules that are set out in the bid proposal.

Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts, Albany, N. Y., and at the office of the District Engineers noted above, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

If the deposit is $10.00 or more, full refund for one copy of the plans and specifications will be made to a bidder for the particular project, if such plans and specifications are returned in good condition within 30 days after the award of the contract or after the rejection of the proposal. The successful bidder is not required to return the copy of the plans and specifications in order to be entitled to such refund. If the deposit is $10.00 or more, partial refund will be made for the return of all other copies of plans and specifications in good condition within 30 days after the award of the contract or the rejection of the proposal.

Special attention of bidders is called to "Information for Bidders" in the Public Works Specifications, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to priorities and allocations under the Defense Production Act of 1950, as Amended, and all regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Department of Public Works" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bid deposit, the execution of the contract and bond shall conform to the provisions of the Highway Law, as set forth in the "Information for Bidders".

The right is reserved to reject any or all bids.

J. BURCH McMORRAN
SUPT. OF PUBLIC WORKS

Bids: September 21, 1961

New York State Dept. of Public Works Contracts U. S. 75 & 76

NOTICE TO BIDDERS

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Barge Canal Improvement Law and Highway Law, sealed proposals will be received, until 10:30 A.M., D.S.T., September 21, 1961 by Henry A. Cohen, Director, Bureau of Contracts, 12th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for:

Contract U. S. 75 for Lowering Sills and Aprons, Raising Towers, Electrical Work and Misc. Work at the East Rome Guard Gates, Rome, Oneida County, New York

and

Contract U. S. 76 for Lowering Sills and Aprons, Raising Towers, Electrical Work and Misc. Work at the West Rome Guard Gates, Rome, Oneida County, New York

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts, 12th Floor, The Gov. Alfred E. Smith State Office Bldg., Albany, New York.

(b) Mr. William Mende, Principal Building Engineer, Department of Public Works, 270 Broadway, New York City, New York.

(c) District Engineer, N.Y.S. Dept. of Public Works, 109 No. Genesee St., Utica, New York.

The deposit for Plans and Proposal Forms for each of these contracts is $10.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's Estimates of Cost for Contracts U. S. 75 and U. S. 76 are confidential and will be made known after all bids have been opened.

Proposals for Contract U. S. 75 and Contract U. S. 76 must be submitted in a separate sealed envelope for each contract with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by a certified check, payable to the order of the "State of New York, Department of Public Works" for the sum of five percentum, (5%) of the bid. The retention and disposal of the bidding checks, the execution of the contracts and bond shall conform to the provisions of the Barge Canal Improvement Law and to the Highway Law as set forth in "Instructions to Bidders" in the contract specifications.

The right is reserved to reject any or all bids.

J. BURCH McMORRAN
SUPERINTENDENT OF PUBLIC WORKS

Bids: September 19, 1961

Republic of Iraq Ministry of Oil Government Oil Refineries Administration

Secret Tender No. (35/61) for the supply of (700) Seven Hundred Long Tons of Sulphur for Daura and Alwand Refineries.

1. Government Oil Refineries Administration invites experienced and specialized contractors to participate in the Secret Tender for the supply of (700 Long Tons) of Sulphur for Daura and Alwand Refineries as follows:—(a) 500 Long Tons for Daura Refinery and (b) 200 Long Tons for Alwand Refinery according to terms and conditions available at this administration.

2. Tender specifications and conditions may be obtained from the Embassy of the Republic of Iraq, 1801 P Street, N.W., Washington, D. C. against payment of Iraq Dinars One (ID 1/—) ($2.80) for each set which is not refundable.

3. Additional information concerning details, if required, can be obtained from Daura Refinery, P.O. Box 278, Baghdad.

4. Tenders shall be submitted in a sealed envelope addressed to the Head of the Purchasing Committee, Government Oil Refineries Administration in the aforementioned location, with the tender number marked on the envelope. Final date for receiving tenders will be on Tuesday at 2 p.m. 19th September, 1961.

5. Each quotation must be accompanied with:

(a) A Cash deposit of 7% for the first one thousand dinars and 5% for the rest of the total price offered for the supply of the material required to be paid to the Directorate of Accounts of this administration, against an official receipt which is to be attached with the tender. Tenderer may submit a Bank Guarantee in the amount stated above from one of the authorized Banks.

6. Tenders not submitted within the specified date and/or not conforming with conditions or specifications stipulated will be ignored.

7. This administration does not bind itself to accept the lowest or any tender.

Director General
Government Oil Refineries Administration

Bids: September 29, 1961

City of New Rochelle, N. Y. Department of Public Works

1. Sealed bids will be received by the DEPUTY DIRECTOR OF PUBLIC WORKS of the CITY OF NEW ROCHELLE, N. Y., at the BUREAU OF ENGINEERING, 28 Wildcliff Drive, New Rochelle, N. Y., until 11:00 A.M. Eastern Daylight Time, September 29, 1961, for:

RECONSTRUCTION OF
STEPHENSON BROOK DRAIN &
SANITARY SEWER
SECTION I
From Echo Bay to the NYNH&H Railroad
(Project No. 26-828-P1)
In The
CITY OF NEW ROCHELLE, N. Y.

in accordance with the Plans, Specifications and Contract Documents on file in the BUREAU OF ENGINEERING where they may be examined, beginning on SEPT. 1, 1961.

Principal Items of the work include:

Approximately 3025 L.F. Reinforced Concrete Box Culvert 16 x 11 ft.
Approximately 3300 L.F. 42" Diameter Sanitary Sewer
Approximately 1400 L.F. Assorted Sizes Drain Pipe
Approximately 15,000 S.Y. Bituminous Pavement

2. Each bid must be accompanied by a DEPOSIT in the form of certified check or cashier's check, made payable to the CITY OF NEW ROCHELLE, N. Y., in the amount of FIVE PERCENT (5%) of the total bid. Bid bonds or cash will not be accepted.

3. Copies of Plans, Specifications and Contract Documents may be obtained at the BUREAU OF ENGINEERING beginning at 9:00 A.M. September 1, 1961, upon payment of TWENTY DOLLARS ($20.00) in cash or Company check, for each set. The entire deposit will be refunded to bona fide bidders, and 50% will be refunded to non-bidders, upon return of all such documents in good condition within two weeks after the bidding date. Material vendors and others in the sub-contractor category will be considered "non-bidders" for the purposes of plan deposit refunds. If all such decuments are not returned within the specified time, the entire deposit will be forfeited.

4. The City reserves the right to reject any or all bids.

ARTHUR F. JONAS, P.E., L.S.
DEPUTY DIRECTOR OF
PUBLIC WORKS

Date: August 31, 1961

OFFICIAL PROPOSALS

Bids: September 28, 1961

The Port of New York Authority
Contract O & M—668

Sealed proposals for "Air Conditioning System for Room 911, Ninth Floor, Port Authority Building," will be received at the office of the Department of Purchase and Administrative Services of The Port of New York Authority, Room 900, 111 Eighth Avenue, New York 11, New York, until 11:00 A.M. o'clock Thursday, September 28, 1961, at which time and place said proposals will be opened and read.

Contract documents may be seen at the office of the Department of Purchase and Administrative Services, Room 900, and copies will be furnished upon deposit of $10.00 per set. Deposit must be delivered to Treasury Department, Room 1001, where a receipt will be issued. The receipt is then to be delivered to the Department of Purchase and Administrative Services, who will furnish the contract documents. The deposit will be remitted if the documents are returned in good condition, not later than thirty days after the opening of Proposals. The deposit will be forfeited if the documents are not returned within thirty days.

THE PORT OF NEW YORK AUTHORITY
S. Sloan Colt, Chairman

New York, September 14, 1961

CLASSIFIED ADVERTISING INDEX

Albert Pipe Supply Co. 95
Ambursen Dam Co., Inc. 95
American-Marietta Co. 93
Associated Pipe & Fitting Co., Inc. ... 95

Boom & Crane Corp. 95
Buff 95

Cohen Iron Co., Leopold 94

Davidson Pipe Supply Co., Inc. 95

Equipment Corp. of America 95

Foster Co., L. B. 95

Gillis & Co. 95
Greenpoint Pipe Supply Corp. 95
Golden, R. D. 94

Harza Engineering Co. 93
Havre De Grace Shipyard, Inc. 95

Lewis Construction Co., Inc., H. I. 95
Lubrecht III, William 95

McKee General Contractor, Inc., Robert E. 93
Midwest Steel Corp. 95
Mississippi Valley Equipment Co. 95

National Schools of Construction 94

PACO 95

Sims, Harley L. 94
Stanhope Inc., R. C. 95
Swabb Equipment Co., Inc., Frank 95

Telephone Engineering Co. 94
Tennessee Valley Authority 93

Valley Steel Products Co. 95

Warren Knight Co. 95
Whisler Equipment Co. 94
Wilson Engineering Corp. 94

EMPLOYMENT NATIONAL COVERAGE OPPORTUNITIES

DISPLAYED RATE:

The advertising rate is $45.20 per inch for all advertising appearing on other than a contract basis. Frequency rates quoted on request.

An advertising inch is measured 7/8" vertically on a column—3 columns—30 inches to a page.

Subject to Agency Commission.

SEPTEMBER 28TH ISSUE CLOSES SEPTEMBER 18TH

UNDISPLAYED RATE:

$2.70 per line, minimum 3 lines. To figure advance payment count 5 average words as a line.

Position Wanted ads take ½ of above rate.

Box numbers—count as 1 line.

Discount of 10% if full payment is made in advance for 4 consecutive insertions.

Not subject to Agency Commission.

Send NEW Ads and Inquiries to Classified Advertising Division of ENGINEERING NEWS-RECORD, P. O. Box 12, N. Y. 36.

ADDRESS BOX NO. REPLIES TO: Box No. Classified Adv. Div. of this publication. Send to office nearest you.
NEW YORK 36: P. O. Box 12
CHICAGO 11: 645 N. Michigan Ave.
SAN FRANCISCO 11: 255 California St.

• POSITIONS VACANT

Structural Engineer-Midwest consulting firm seeks Ph.D. to design complex steel structures, reinforced and prestressed concrete. Preference will be given to applicants with practical experience. Permanent position with established firm in business since 1929. Moving expenses paid. Send resume, including education, experience, and personal qualifications to P-6245. Engineering News-Record.

Sanitary Engineer. Opportunity to assume overall supervision and client contact on sanitary projects for long-established midwestern consulting engineering firm. Experience in all phases of sanitary work is desired. Send complete resume of experience and qualifications. Replies held in strictest confidence. Our employees know of this advertisement. P-7178, Engineering News-Record.

Engineers experienced in design of water and sewage projects. Location, Ohio. Send complete resume and salary requirement. P-7218, Engineering News-Record.

Water Supply Designers (3) Reg. P.E.'s high salary, subsistence, bonus and other fringe benefits. Overseas assignment 18 months. Send Resume: Brown Engineers, 10 Columbus Circle, New York 19, N. Y.

Estimator—experienced in all types of excavation, and concrete structures. Expanding company, location in East. Please send resume. P-7396, Engineering News-Record.

City of Arcata has openings for: City Engineer, Calif. Regis. C.E., exper. including muni. pub. wks. water and sewer systems, $600-$750, starting salary dependent upon experience. Asst. City Engineer, Grad. Engr., E.I.T., office and field work, pub. wks. exper. preferred, $500-$600. Live and work in the heart of the Redwood Empire College town, modern schools, equable climate. Apply City Mgr., City Hall, Arcata, Calif.

Superintendent of Rigging—Capable of full responsibility for customer contact, estimating, and supervising. Large Middle Atlantic region rigging contractor—domiciled in Philadelphia, Pa. Forward resume of experience, education and background, together with recent photograph. Salary and fringe benefits commensurate with ability and results produced. P-7350, Engineering News-Record.

Overseas Managers. Long established U. S. consulting engineering firm is seeking engineering graduates to assume positions as overseas Branch Managers. Positions require administrative and management skills, together with experience in design and construction work. Age should be in range of 35 to 50 years. Excellent opportunity for qualified individuals to grow with expanding overseas operation. Send resumes covering personal background to P-7380, Engineering News-Record.

Permanent openings for Resident Engineers experienced in supervision of construction of large steam power plants and/or high-voltage transmission lines. Degree and registration desirable. Excellent opportunity with consulting engineering firm. Please send resume of education and experience to P-7228, Engineering News-Record.

• POSITIONS VACANT

Electrical Engineer—Experienced in design of electric transmission, distribution and substation facilities. Progressive consulting engineering firm offers permanent employment with opportunity for personal development and advancement potential. Submit resume and salary requirements to Stanley Engineering Company, Muscatine, Iowa.

Sanitary Engineer with 3 to 10 years experience in preliminary studies and/or design of sanitary projects. Long-established consulting engineering firm offers permanent employment with opportunity for advancement. Please submit resume of education, experience and salary requirements to P-7363, Engineering News-Record.

Water Plant Superintendent—Water Distribution Superintendent—Mid-Western University City of 40,000 population is accepting applications of the above positions. The City has recently assumed operation of the Water Utilities and the position offers a real challenge for competent and experienced men. Salary open, liberal vacation, sick leave, etc. Apply P-7440, Engineering News-Record.

Positions open for experienced highway designers, draftsmen and tracers. Address application to Yule, Sticklen, Jordan & McNee, P.O. Box 337, Camp Hill, Pa.

Engineering Sales Correspondent—The Fabricated Products Division of a major steel corporation is looking for a young engineering graduate to fill the position of sales correspondent in its Philadelphia branch office. This position will lead to a sales engineer field assignment in one of the Mid-Atlantic States. Attractive base salary, bonus plan and fringe benefits. P-7438, Engineering News-Record.

Civil Engineer for Overseas Work with design experience to head civil department. Age thirty to forty preferred. Top salary and living allowance for two year assignment. Send resume and photograph to P-7306, Engineering News-Record.

(Continued on opposite page)

"Put Yourself in the Other Fellow's Place"

TO EMPLOYERS
TO EMPLOYEES

Letters written offering Employment or applying for same are written with the hope of satisfying a current need. An answer, regardless of whether it is favorable or not, is usually expected.

MR. EMPLOYER, won't you remove the mystery about the status of an employee's application by acknowledging all applicants and not just the promising candidates.

MR. EMPLOYEE you, too, can help by acknowledging applications and job offers. This would encourage more companies to answer position wanted ads in this section.

We make this suggestion in a spirit of helpful cooperation between employers and employees.
This section will be the more useful to all as a result of this consideration.

Classified Advertising Division

McGRAW-HILL PUBLISHING CO., INC.

330 West 42nd St., New York 36, N. Y.

PLANNING ENGINEERS

Must have broad background in the planning of river control works, drainage, and highways. Should be familiar with project and regional economic analyses. Fifteen to twenty years experience necessary. Good salary. Fringe benefits. There will be some foreign travel. Please send complete resume of experience to Personnel Manager.

HARZA ENGINEERING COMPANY
400 West Madison Street, Chicago 6, Illinois

• POSITIONS VACANT

(Continued from opposite page)

Engineer, Structural — Permanent position with Consulting Civil Engineering firm in upstate New York. College graduate. Send resume including education, experience, personal qualifications and salary desired. P-7285, Engineering News-Record.

Highway Maintenance Engineer needed to complete Advisory Group assigned to Government of Vietnam. Applicant should be a graduate and/or registered civil engineer with extensive experience in responsible public works assignments, especially highway maintenance operations. High degree of initiative, judgment, and skill in handling human relations required in addition to technical competence. Two year employment contract. Travel in single status preferred. Open to U. S. citizens only, not over 65 years of age. $12,000 per annum plus furnished housing in Saigon. Send resume or write for application blank to Capitol Engineering Corporation, Dillsburg, Pennsylvania.

Ace Builder—prefer engineering degree, to complete already started thin-shell concrete hotel complex in St. Thomas, presently suffering from schedule slowup due to disorganized field supervision. Must have in-the-field knowhow and get the most out of small crew, be able to improvise when necessary; thoroughly familiar housing construction and developments. This is approximately 4 to 5 month job with choice of permanent connection. Essential have no racial prejudice. Must be available immediately. Salary $250 per week plus housing for man traveling alone. Airmail to Airform Development Corp., Box 2516, St. Thomas, Virgin Islands.

Wanted—Estimating Engineer with experience as construction superintendent, familiar all phases high rise re-enforced concrete buildings for sales position with prominent manufacturer of construction machinery. P-7436, Engineering News-Record.

Estimator—Utility Work Buildings, site work & paving—must be able to take off a price—opportunity with expanding NYC general contractor. Submit resume & salary. P-7455, Engineering News-Record.

• EMPLOYMENT SERVICES

Want higher salary? 200—1,000 new Executive positions reported monthly. Get free copy. National Employment Reports, 105 W. Adams, 830-B, Chicago 3.

• POSITIONS WANTED

Chief Estimator now employed desires connection in South—25 years experience building & heavy construction—best references—available reasonable notice to present employer. PW-7255, Engineering News-Record.

Canadian draftsman 34, 15 years experience Municipal, Topo, Mapping. Desires permanent employment San Francisco area. Requires sponsor. John LeSueur, 1068 Burnaby St., Vancouver 5, B. C., Canada.

Resident Manager-Craft, Field Superintendent. 22 years supervisory and advisory experience industrial type construction domestic, Europe, Middle and Far East. Refinery, steam generating, pulp, atomic energy, nuclear research reactors etc. Capable administrator, personnel, labor relations, contract administration. Strong background piping, instrumentation, mechanical. Completing second Middle East contract. Available overseas only. PW-7309, Engineering News-Record.

General Supt.-Project Manager. 20 years experience heavy construction—expressways, toll roads, airports, dams. Can handle all phases work from preliminary bid investigation through final estimate. PW-7278, Engineering News-Record.

Graduate Engr.—Age 33—10 years experience all phases of construction seeks challenging position in construction management with opportunity for advancement and growth. PW-7379, Engineering News-Record.

(Continued on the following page)

GENERAL SUPERINTENDENT BUILDING CONSTRUCTION

Exceptional opportunity for experienced Building Construction man with previous experience preferably as General Superintendent with large general contractors or as Superintendent with responsible charge of large, complex, competitively bid projects. Must have record of accomplishment with thorough background in all phases of large building construction jobs, competent and coordinating. Expanding nation-wide operations of this company require travel by General Superintendent to oversee projects with individual jobs ranging up to $20 million. Total active contract of company approximately $75 million.

Applications will be held in the strictest confidence. Direct replies to:

P-7448, Engineering News-Record
645 N. Michigan Ave., Chicago 11, Ill.

PRECAST WALL PANELS

A challenging opportunity for experienced production supervisor. Growing wall panel plant needs capable foreman to be trained for plant superintendent. State age, experience and salary expected.

All replies will be held strictly confidential.

Please write:
Mr. Lloyd M. Parker
District Manager

AMERICAN-MARIETTA COMPANY
Concrete Products Division
P. O. Box 6833, Memphis, Tennessee

General Building Construction

SUPERINTENDENT

IMMEDIATE OPENING

Progressive and expanding company operating primarily in the south seeks experienced building construction man as General Superintendent to oversee varied projects in the $1 to $10 million range. Top-notch man with substantial successful experience on varied competitively bid projects required.

Exceptional opportunity to offer an aggressive and hard working man now and in the company's future expansion. Preference for person under 45. Send resume covering experience, personal data, references and salary requirements to:

P-7449, Engineering News-Record
645 N. Michigan Ave., Chicago 11, Ill.

DETAILER—REINFORCING STEEL

MUST BE COMPETENT—
PERMANENT—GOOD PAY—
LOS ANGELES AREA—

P. O. BOX "9" GLENDALE, CALIF.

CIVIL ENGINEERS

Graduate Civil Engineer with at least 10 years progressive experience in design of powerhouses, tunnels, and intake structures for Section Head position. Working knowledge of fill dams and hydraulics with capability for following design studies in other departments required. Must have initiative to carry out studies to completion. Experience in client contact also necessary.

Graduate Civil Engineer as cost estimator for large hydro project with good experience in writing and reviewing specifications. Must have at least 5 years experience.

Fringe benefits and partial relocation costs. Send complete resume to Personnel Manager.

HARZA ENGINEERING COMPANY
400 West Madison Street, Chicago 6, Illinois

ELECTRICAL ENGINEERS

— for —

TENNESSEE VALLEY AUTHORITY

TVA needs electrical engineers, for its Division of Design and Construction, to work on its expanding program.

FOR DESIGN at Knoxville, Tennessee. Beginning salaries $6600, $7600 and $8950 depending upon qualifications. To work on the design of electrical features of hydro and steam generating plant and other structures.

FOR CONSTRUCTION at various projects in the Tennessee Valley area. Beginning salary $7600 for engineers with 2½ to 3 years experience on heavy construction, preferably steam plants. To do engineering inspection of the installation of electrical features of hydro & steam plants.

All positions carry automatic within grade increases for satisfactory service, liberal vacation and sick leave, retirement, hospitalization and insurance benefits.

Send resume to
EMPLOYMENT BRANCH

TENNESSEE VALLEY AUTHORITY

Knoxville Tennessee

GRADUATE CIVIL or ARCHITECTURAL ENGINEERS and SENIOR CARPENTER FOREMEN

We are looking for young, recent college graduates, with a degree in either architectural or civil engineering, for a position in our El Paso, Texas Estimating Department. This position provides a training ground for our future superintendents and executives. It is an excellent opportunity for a young man to obtain a desirable position with a reliable firm doing all types of construction work.

Experienced senior carpenter foremen required for work in Southwest area.

ROBERT E. McKEE
General Contractor, Inc.
P. O. Box 562 El Paso, Texas

EMPLOYMENT OPPORTUNITIES

• *POSITIONS WANTED*
(Continued from preceding page)

Geologist Engineering Miner—30, family, willing to relocate. Exp. in design and drafting of highways & bridges, subdivisions including calculating, san. sewer, profiles and water systems. Supervision of bridge, water well drilling and highway construction. PW-7356, Engineering News-Record.

Construction Equipment Salesman. 25 years experience| Metropolitan New York territory. Desires selling position direct for manufacturer. PW-7431, Engineering News-Record.

Civil Engineer, 26, single—Exp. hwys, bridges & gen'l bldg. const., fluent French, overseas or anywhere. PW-7422, Engineering News-Record.

Executive: Experienced Genrl. Manager, hvy. bldg & mech const. Govt Contracts, Atty, Acct, Adm. employed. PW-7407, Engineering News-Record.

B.S.C.E., P.E., 33. 6 yrs. exp. sewers, hwys, insp. West. Southwest area. PW-7323, Engineering News-Record

Estimator, fifteen years experience, desiring connection with medium sized General Building Contractor to take full responsibility from bidding to completion, to handle buying, sub-contracts, change orders, shop drawing and progress flocharts. Prefer Southern states. PW-7410, Engineering News-Record.

Civil Eng. 25 yrs. exp: layout eng., field eng., and asst. const. eng. on hwys, locks, dams and buildings. Seeks job as field or layout eng. or party chief. Graduate, 57, $150. PW-7395, Engineering News-Record.

General Superintendent—Roads, dams, flood control. Engineering and estimating experience, willing to relocate. Reply to E. C., 953 —4th Stree', Morro Bay, California.

C.E. with 3 yrs. exp. all phases bldg. const. supervision, layout, estimating. Seek perm. position in suburban N. Y. area. PW-7427, Engineering News-Record.

Civil-Structural Engineer, age 45. European Diploma, M.S.C.E., good at reinforced concrete (any type). P.E. license in prep. Ambitious and reliable. References and resume on request. PW-7408, Engineering News-Record.

Construction Engineer, B.C.E., 28, single. Six years petro-chem experience. Desires responsible supervisory position, foreign or domestic. PW-7442, Engineering News-Record.

Construction Project Manager, Superintendent or Consultant, with mechanical background. Age 49, available now. Desires connection with growing concern. Willing to relocate, travel, solve problems. Please explain offer in first letter. All replies acknowledged. PW-7443, Engineering News-Record.

Job Wanted—Young man, 27—Oper. Motor Grader—desires overseas work with U. S. firm. Box W, Pine Hill, N. Y.

BSCE—ten years construction experience including layout, planning, scheduling, cost control, liaison and direction of work on governmental and heavy industrial projects. Age 35, Southern location preferred. Some travel OK. Complete resume on request. PW-7441, Engineering News-Record.

Civil Engineer, registered, BSCE, 39—desire position as City Engineer or Director of Public Works. Presently Engineer in Public Works. Experience in highways, bridges, municipal works, land development and surveys. Resume on request. PW-7452, Engineering News-Record.

Registered Professional Engineer, Structural in Ohio. Civil in Michigan. Ten years in private practice architectural field designing and supervision of industrial and commercial building projects costing in excess of one million. Nine years as chief engineer for structural steel fabricating company, in charge of estimating, sales and engineering. Desires association with architectural, engineering, contracting or industrial concern, on salary or partnership basis. Will relocate. PW-7454, Engineering News-Record.

Computer Applications Engineer, BSCE, P.E. Considerable engineering—programming experience. Organized and supervises computer applications group; adapting design, estimating and field calculations to an electronic computer. Papers and advanced study; professionally active. Structural, highway and construction experience. PW-7453, Engineering News-Record.

SEARCHLIGHT SECTION
CLASSIFIED ADVERTISING

BUSINESS OPPORTUNITIES - EQUIPMENT - USED or RESALE

DISPLAYED RATES

The advertising rate is $25.50 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured 7/8 inch vert. on one col., 3 columns—30 in. to a page.

EQUIPMENT WANTED or FOR SALE ADVERTISEMENTS acceptable only in Displayed Style.

UNDISPLAYED RATES

$2.70 a line, min. 3 lines. To figure advance payment count 5 average words as a line.

BOX NUMBERS count as one additional line in undisplayed ads.

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads.

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. Forty-eighth year.
WILSON *Engineering Corp.*
College House Offices HARVARD SQ., CAMBRIDGE, MASS.

CONSTRUCTION SUPERVISION
Exclusive Training Course by mail for top positions. Publishers Manual of Advanced Construction Management. Send postcard for details.
National Schools of Construction
Est. 1952
Satsuma, Florida

WANTED
AIR COMPRESSORS
Ingersoll Rand Portable 600' Rotary Diesel on pneumatic tires.
W-7373, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

Wanted-To-Buy
Fairleads For Marion 43-M Truck Crane
R. D. GOLDEN
100 Pine St. Green Island, N. Y.

• *BUSINESS OPPORTUNITY*

Construction Firm wanted to purchase. Well established and financially sound. All replies held confidential. Room 724, Prudential Bldg., Houston, Texas.

SEARCHLIGHT Equipment Locating Service
No Charge or Obligation
This service is aimed at helping you, the reader of "SEARCHLIGHT", to locate Surplus new and used Engineering and Construction equipment not currently advertised. (This service is for USER-BUYERS only).

How to use: Check the dealer ads to see if what you want is not currently advertised. If not, send us the specifications of the equipment wanted on the coupon below, or on your own company letterhead to:

Searchlight Section Locating Service
c/o ENGINEERING NEWS-RECORD
P. O. Box 12, N. Y. 36, N. Y.

Your requirements will be brought promptly to the attention of the equipment dealers advertising in this section. You will receive replies directly from them.

Searchlight Equipment Locating Service
c/o ENGINEERING NEWS-RECORD
P. O. Box 12, N. Y. 36, N. Y.

Please help us locate the following equipment components.

.....

.....

NAME .....
TITLE .....
COMPANY .....
STREET .....
CITY 9/14/61

3 MANITOWOC 3900'S
FOR RENT WITH OPTION

2—3900-B Manitowoc—Full 100 ton—combination Dragline—Clamshell—Lift Cranes, 48" shoes, 20'4" crawlers, caterpillar engine with torque converter 180' Pennant boom pin connection, 30' cantilever jib, 3-piece counterweight, Kohler light plant, 6-12 Mos. old.

1—3900-B Manitowoc—80 ton—combination Dragline—Clamshell—Lift Crane, 48" shoes, 20'4" crawlers, caterpillar engine with torque converter, 160' boom pin connection, 30' cantilever jib, Kohler light plant, 2 yrs. old.

All Machines perfect condition. Been used principally on crane work—located Oklahoma—available October 1, 1961.

CONTACT:
Harley L. Sims—Hattiesburg, Mississippi
TELEPHONE 584-7581

FOR SALE or RENT

Manitowoc 3900-A Lift Crane. New 1959. 130' Bm. 30' jib. Ind. Bm. Hoist & Swing. 48" treads. Dual Controls.
Lorain L50 Crane-Dragline. 1 yd. New 1951. 60' Bm. GM Diesel. Torq Conv. 30" treads. Dual controls.
50 Ton Amer. 3046 Stiffleg Derrick. 130' Bm.
30 Ton Wiley Type F Stiffleg Derrick. 60' bm.
20 Ton American Stiffleg Derrick. 96' bm.
200 HP Amer. #180 3D Elec. Hoist & Swinger.
40 ton Amer. #408 Diesel Locomotive Crane.
45 & 25 Ton GE Diesel Elec. Locomotives.

WHISLER EQUIPMENT CO.
1905 Railway Exchange Bldg., St. Louis 1, Mo.

BUY SELL RENT
IN STOCK—DISMANTLED
TEMPORARY BRIDGE BEAMS
HEAVY—LONG OR SHORT SPANS
LEOPOLD COHEN IRON CO.
3000 S. KEDZIE CHICAGO 23, ILL. BI 7-6336

DREDGES AVAILABLE
SIZES—12", 16", 20", 22" and 27"; bare boat or with complete attendant plants.
BASIS—Some charters, charter-purchase, cash.
WANT—Dredges from 12" to 27" regardless of locations.
FS-7402, Engineering News-Record
Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

U.S. ARMY EE-8
Telephone fully reconditioned at 2 for $35.00. Any number can be used on same line. Wire 1c per ft. or $35.00 per mile. Write for complete telephone list.
TELEPHONE ENGINEERING CO.
Dept. ENR-9141 Simpson, Pa.

FOR SALE

1—Erie Strayer Automatic Central Mix Plant with one 3 c.y. Smith Tilting Mixer, aggregate elevator, 800 barrel ground storage silo, 100 kva (Cat.) diesel generator, forced hot oil heating system.

H. I. LEWIS CONSTRUCTION COMPANY, INC.
MIDDLETOWN, PA.—PHONE WHitney 4-4654

LOW COST INSTALLATION AND OPERATION

CABLEWAYS
IMMEDIATE SHIPMENT
ELECTRIC, STEAM OR DIESEL
CAPACITY 3 TO 20 TONS
SELL, RENT OR BUY

FOR DAMS BRIDGES BREAKWATERS FILTRATION AND SEWERAGE PLANTS

FOR SPEED ECONOMY EFFICIENCY FLOOD SAFETY LABOR REDUCTION

AMBURSEN DAM CO. INC.
295 MADISON AVE. NEW YORK

LOCOMOTIVE CRANES

1—#8 Industrial Brownhoist—85' boom, 35-40 ton cap.
1—#7 Industrial Brownhoist—63' boom, 30-35 ton cap.
1—Mdl F Ohio—75' boom, 30-ton cap.

CRANES AVAILABLE FOR SALE OR RENT

EQUIPMENT CORPORATION OF AMERICA
Box 168J, Clifton Heights, Pa.
Box 43J, Groveton, Pa.
(suburb of Pittsburgh)

---

3 DRUM HOIST

New 3 drum hoist with swinger attached. Diesel power with torque converter. 18,000# line pull.

HAVRE DE GRACE SHIPYARD, INC.
Havre De Grace, Maryland

HEAVY EXCAVATION EQUIPMENT
LARGE DRAGLINES, SHOVELS, CRANES, ROTARY DRILLS, EUCLID DUMP TRUCKS
FRANK SWABB EQUIPMENT COMPANY, INC.
Hazleton National Bank Building, Hazleton Pa.
Phone GL 5-3658

FOR SALE: EXTRA LONG "T-1" BOOMS

Length	Qty	For Mounting on Crane Models
250'	1	Manitowoc 4000 or 3900 (100 Ton)
180'	2	Manitowoc 3500—or—Lima 802

"50' Jibs also available for these booms

BOOM & CRANE CORP.
945 Close Avenue Bronx 72, New York
Tel: TYrone 3-4444

16" x 10' PIERCED PLANK AIRPORT LANDING MATS. Marsten Type-Interlocking. New Surplus—Never used. Original Bundles.

PACO—Seattle, Wash.
P. O. Box 3742A MA. 4-5201

FOR SALE
25 yd. Bucyrus-Erie Electric Dragline
WILLIAM LUBRECHT, III
CONSTRUCTION EQUIPMENT
311 W. Diamond Ave., Hazleton, Pa.
Telephone Gladstone 5-4041—5-0253

For Sale
50 TON
Whirley Gantry Heavy Duty Electric Cranes
30 & 80 TONS
Stiff leg Steel Derrick for Barge or Dock Mounting complete with Power
B&E Steam Pile Driving Cranes with Hammers Leads—Crawler type
FS-7403, Engineering News-Record Class. Adv. Div., P.O. Box 12, N.Y. 36, N.Y.

SURVEYING INSTRUMENTS
USED • REBUILT • SALE
RENT • REPAIRING

PILING
SURPLUS NEW and USED
For Sale, Wanted or Rent

PIPE
Surplus New & Used
FOR SALE, WANTED OR RENT

TRANSITS AND LEVELS

New or Rebuilt
Sale or Rent

Headquarters for REPAIRS — any make — Factory Service We will also buy your old instruments or take them in *trade*.

A complete line of Engineering Instruments and equipment for field or office. Write for catalog NRL 209.

WARREN-KNIGHT CO.
Manufacturers of Transits and Levels
136 No. 12th St., Philadelphia 7, Penna.

H & SHEET STEEL PILING

1400 PCS. BP8, BP10, BP12—BP14—55' to 60'
3700 PCS. BETH. SP6A 50', 56' 48' & 40' & 35'
1900 PCS. MP112—12' 15' 20' 25' 31' 35' & 60'
2800 PCS. BETH.—AP3 10, 15', 20', 25', 30' & 60'
2500 PCS. BETH.—DP2—20', 25', 30', 35', 40' & 60'
1200 PCS. ZP38-ZP32—20', 32', 36', 40', 50', 60'
600 PCS. ZP27—20', 26', 31', 40', 45', 60'
500 PCS. 10' & 15' Corrugated Piling

PILING BOUGHT—SOLD—RENTED
STOCKS: N. Y.—BOSTON—BUFFALO
TORONTO—BALTIMORE—JACKSONVILLE
MIAMI—RICHMOND—NEW ORLEANS

DIESEL LOCOMOTIVES & CRANES
12—Gen. Elec. 100, 80, 70, 65, 45, 25, & 23 ton
25 Ton Industrial Loco Crane 60' Boom
7250' & 3600' JOY ELEC AIR COMPRESSORS
Both—2300 V-WN 224C-Radial New 58

R. C. STANHOPE, INC.
60 E. 42nd St. N. Y. 17, N. Y.
Telephone MU 2-3075 or MU 9-1898

Call: HYACINTH 7-4900

PIPE, VALVES & FITTINGS
PILING • CULVERTS
ASBESTOS-CEMENT PIPE • ALUMINUM PIPE

ALBERT PIPE SUPPLY CO., Inc.
103 VARICK AVE., BROOKLYN 37, N.Y.

DAVIDSON
PIPE SUPPLY CO. INC.
Seamless and Welded Steel Pipe
Fittings, Valves, Pipe Fabricating
Call GEdney 9-6300
50th St. & 2nd Ave., B'klyn 32, N. Y.

ALL MAKES

RE-BUILT REPAIRS RENT REAL EXPERTS

69 Dey St., New York WOrth 2-2797

STEEL SHEET
PILING by DIALING
Call St. Louis Collect
CHestnut 1-4474

RENT, SELL OR BUY
PIPE H-BEARING PILE
FAST SERVICE
NATION-WIDE STOCKS
LOW RATES
ALL LENGTHS
ALL SECTIONS
PILE DRIVING EQUIPMENT
NORTH, SOUTH, EAST or WEST

MISSISSIPPI VALLEY EQUIPMENT CO.
(WHISLER STEEL PILING CO.—Affiliate)
1908-A Railway Exchange Bldg.
St. Louis 1, Mo. CHestnut 1-4474

ASSOCIATED PIPE & FITTING CO., INC.

PILING PIPE SHELLS MANDREL FITTINGS	"H" BEARING PILE-POINTS AND SLEEVES	TIMBER SPLICERS AND SHOES	CULVERTS CIRCLE ARCH SECTIONAL

262 RUTHERFORD BLVD., CLIFTON, N.J. • PR 3-8400

RAILS-TIES
TRACK ACCESSORIES

STEEL PIPE ALL SIZES ½" TO 84" O.D.
Large Stocks—Low Prices
STEEL TUBING SQUARE and RECTANGULAR Sizes ½" x ½" x .049" to 8" x 8" .500" wall
Fast delivery anywhere—one piece or a carload
VALLEY STEEL PRODUCTS CO.
124 Sidney St. PRospect 3-3020 St. Louis 4, Mo.

RAILS
MIDWEST STEEL CORP.
502 DRYDEN STREET
CHARLESTON, W.VA.

Faster From Foster
STEEL-SHEET
PILING
All sections from our regular stocks
L. B. FOSTER CO.
Pittsburgh 30 · New York 7 · Chicago 4 · Houston 2
Los Angeles 5 · Atlanta 8 · Cleveland 35

STEEL PIPE
NEW — STRUCTURAL — RECONDITIONED
VALVES & ALL TYPE FITTINGS
COMPLETE FABRICATION FACILITIES
GREENPOINT PIPE SUPPLY CORP.
341 Stagg Street, Brooklyn 6, N. Y. EV. 6-7200

RAILROAD Cross and Switch **TIES**
Promptly from adequate stocks
NEW and USED *(as available)*
GILLIS & COMPANY
134 Breckenridge Lane Louisville 7, Ky
TW 5-9484

PROFESSIONAL SERVICES

Cards arranged by areas, states, cities, names — **Additional cards on following pages**

NEW ENGLAND

Goodkind & O'Dea
Consulting Engineers
Design and Supervision
Foundations, Structures, Highways
1214 Dixwell Ave. Hamden, Conn.
610 Bloomfield Ave, Bloomfield, N. J.
325 Spring Street, New York, N. Y.
108 W. Lake Street, Chicago 1, Ill.

John J. Mozzochi and Associates
Civil Engineers
Highways - Airports - Developments
Survey - Design - Inspection
217 Hebron Avenue 200 Dyer Street
Glastonbury, Conn. Providence, R. I.

Camp, Dresser and McKee
Consulting Engineers
Water Works and Water Treatment
Sewerage and Sewage Treatment
Municipal and Industrial Wastes
Flood Control
Reports, Design, Supervision
18 Tremont Street Boston 8, Mass.

Fay, Spofford & Thorndike, Inc.
Engineers
Industrial Plants Incinerators
Water Supply, Sewerage, Drainage
Bridges Express Highways
Port and Terminal Work Airports
Designs Investigations
Supervision of Construction
Boston 8, Massachusetts

Jackson & Moreland, Inc.
Jackson & Moreland Int'l., Inc.
Engineers and Consultants
Electrical—Mechanical—Structural
Design and Supervision of Construction
-:- for -:-
Utility, Industrial and Atomic Projects
Surveys—Appraisals—Reports
Technical Publications
Boston Washington New York

Chas. T. Main, Inc.
Engineers
Design and Supervision of Construction for Industrial Plants—Electrical, Steam and Hydraulic Engineering—Investigations, Reports, and Appraisals.
Boston, Mass. Charlotte, N. C.

Metcalf & Eddy
Engineers
Soils, Foundations, Waterworks, Sewage Works, Drainage, Irrigation, Flood Control, Refuse, Industrial Wastes, Airports, Highways, Military Projects, Industrial and Commercial Facilities.
Statler Building, Boston 16, Massachusetts

Moore Survey & Mapping Corp.
Engineers-Photogrammetrists-Surveyors
Geodetic Control—Construction Layout
Aerial Topographic Surveys—Tax Maps
Hydrographic Surveys—Photogrammetry
23 Grafton Circle—Shrewsbury, Mass.

MIDDLE ATLANTIC

Ewin Engineering Corporation
Designers of Port Facilities, Foundations, Industrial Plants, Bridges, Highways, Sewage Disposal and Urban Renewal.
5104 MacArthur Blvd. N.W.
Washington, D. C.
DuPont Plaza Center, Miami 32, Fla.
150 Savannah St. Mobile, Ala.

Airways Engineering Corp.
Airports, highways, dams, fuel storage, pipe lines, aerial topographic mapping.
1212-18th St., N.W.,
Washington 6, D. C.
Phone: REpublic 7-8131

Whitman, Requardt & Associates
Engineers—Consultants
Civil—Sanitary—Structural
Mechanical—Electrical
Reports, Plans, Supervision, Appraisals
1304 St. Paul St., Baltimore 2, Md.

Baker-Wibberley & Associates, Inc.
Consulting Engineers
Civil, Sanitary, Structural,
Foundations, Soils
49 N. Jonathan St., Hagerstown, Md.
Baltimore, Md. Waynesboro, Pa.

Louis Berger & Associates
Consulting Engineers
Highways-Bridges-Dams-Airfields
Structures-Buildings-Industrial Plants
Military Installations-Foundations
Studies-Reports-Planning-Design
177 Oakwood Avenue, Orange, N. J.
2nd and Locust Streets, Harrisburg, Pa.
200 S. Main Street, Salt Lake City, Utah
1505 Delashmut Ave., Columbus 12, Ohio
46 Baseler Strasse, Frankfurt/Main, Ger.
8 rue de Neuchatel, Geneva, Switzerland
Torre de Madrid, Madrid, Spain
12 Jinnah Avenue, Dacca, East Pakistan
206 Asia Life Insurance Bldg., Kuala Lumpur, Malaya
Rangoon, Lahore, Lagos, Hong Kong

Joseph S. Ward and Associates
Consulting Soil and Foundation Engineers
Site Investigation, Boring Supervision, Laboratory Soil Testing, Foundation and Pavement Analysis and Design, Construction Supervision, Engineering Reports and Consultation
91 Roseland Avenue Caldwell, N. J.
Jefferson Building Phila., Penna.

Victor J. Lo Pinto Associates
Consulting Engineers
SOILS - FOUNDATIONS - HIGHWAYS
Investigation - Design - Supervision
Sub Surface Exploration
Laboratory and Field Tests
Land Development Engineering
58 Branchport Ave., Long Branch, N. J.

Albert C. Jones Associates
Consulting Engineers
Private and Municipal Engineering
Sewerage-Sewage Treatment
Water Supply and Distribution
Investigations and Appraisals
Photogrammetric Engineering
Aerial Maps
223 High St. Mount Holly, New Jersey

Edwards and Kelcey
Engineers and Consultants
Traffic Transportation Parking
Expressways Airports Public Works
Surveys - Reports - Design - Supervision
3 William Street, Newark 2, New Jersey
Boston Salt Lake City New York
Providence Minneapolis

Porter & O'Brien
O. J. PORTER & COMPANY
CONSULTING ENGINEERS
Airports — Highways — Expressways — Buildings — Bridges — Dams — Harbors — Foundations — Stabilization — Pavements.
Reports, Designs & Supervision
415 Frelinghuysen Ave., Newark 5, N.J.
4201 Sunset Blvd., Los Angeles 29, Cal.
1421-47th Avenue Sacramento 22, Cal.

W. Anderson Associates
SPECIALISTS
Industrial Building Design
480 Route 17
Paramus, N. J
CO 2-5005

Boswell Engineering Co.
Consulting Engineers
Highways, Bridges, Airports, Municipal
Ridgefield Park, N. J.
West Nyack, New York
Salt Lake City, Utah
Anchorage, Alaska

B. K. Hough
Consulting Engineer
Soils & Foundation Engineering
Site investigations, soil testing, design analysis for earthworks, foundations and pavements, field inspection, engineering reports, consultation.
121 E. Seneca St. Ithaca, New York

Ammann & Whitney
Consulting Engineers
Design and Supervision of Construction of Bridges, Highways, Expressway, Buildings, Special Structures, Airports and Airport Facilities
111 Eighth Avenue, New York 11, N.Y.
Milwaukee - Washington - Philadelphia
Paris - Athens - Tehran

Blauvelt Engineering Co.
CONSULTING ENGINEERS
Highways,
Bridges,
Reports
New York, N. Y. Philadelphia, Pa.
Woodbury, N. J. Crystal Lake, Ill.

Clinton Bogert Engineers
Consultants
Ivan L. Bogert Robert A. Lincoln
Charles A. Manganaro William Martin
Water & Sewage Works Incinerators
Drainage Flood Control
Highways and Bridges Airfields
145 E. 32nd St., New York 16, N. Y.

Bowe, Albertson & Associates
Engineers
Water and Sewage Works—Industrial Wastes — Refuse Disposal — Valuations —Laboratory Service
75 West St. 1000 Farmington Ave.
New York 6, N.Y. W. Hartford 7, Conn.

Brown Engineers
Brown Engineers International
Architects—Engineers—Planners
Airports, Bridges, City Planning, Commercial Buildings, Dams, Highways, Housing, Hydraulics, Hydroelectric Power, Industrial Plants, Ports, Railroads, Sewerage, Transportation Studies, Urban Renewal, Water Supply.
Studies—Design—Management
Supervision of Construction
Coliseum Tower
10 Columbus Circle
New York 19, N. Y.

Buck, Seifert and Jost
Consulting Engineers
Water Supply — Sewerage — Hydraulic Developments—Reports and Valuations, Chemical and Biological Laboratories.
New York City, 112 E. 19th St.

Gibbs & Hill, Inc.
Consulting Engineers
Water, Sewage & Industrial Waste Treatment Works — Roads, Bridges & Railroads—Conventional & Nuclear Power Generation — Electric Transmission & Distribution Systems—Industrial & Communication Facilities.
Penn Station New York 1, N. Y.

Hardesty & Hanover
Consulting Engineers
Bridges
Fixed and Movable
Highways
Expressways, Thruways
Special Structures
Design, Supervision,
Inspection, Valuation
101 Park Avenue New York 17

Frederic R. Harris, Inc.
Consulting Engineers
New York, N. Y.
Norwalk, Conn. New Orleans, La
Toronto, Canada The Hague, Holland

Hazen and Sawyer
Engineers
Richard Hazen Alfred W. Sawyer
H. E. Hudson, Jr.
Water and Sewage Works
Industrial Waste Disposal
Drainage and Flood Control
360 Lexington Ave., New York 17, N.Y.

Howard, Needles, Tammen & Bergendoff
Consulting Engineers
Bridges • Structures • Foundations
Admin. Ser. • Traffic & Parking •
Express Highways • Airports
Kansas City - Cleveland - New York

King & Gavaris
CONSULTING ENGINEERS
Associates:
W. Mack Angas
David Carsen
Dr. G. P. Tschebotarioff
Sidney Zecher
Bridges, Highways, Tunnels
Waterfront Structures, Reports
Investigations, Foundations
Design & Supervision of Construction
41 E. 42nd St., New York 17, N. Y.

Litchfield Whiting Bowne & Assoc.
Engineers—Architects
Sewage, Water, Bridges, Airports, Flood Control, Electrification, Hospitals, Schools, City Planning, Abbatoirs, Highways, Air Conditioning, Industrial Buildings, Military.
8 West 40th St., N. Y. 18, N. Y.
Rome Tehran Bangkok

Modern Engineering Corporation
Design—Consulting
62 William Street, New York, N. Y.

Moran, Proctor Mueser & Rutledge
Consulting Engineers
Foundations for Buildings, Bridges and Dams; Tunnels, Bulkheads, Marine Structures; Soil Studies and Tests; Reports, design and supervision.
415 Madison Ave., New York 17, N.Y.
Eldorado 5-4800

Parsons, Brinckerhoff, Quade & Douglas
ENGINEERS
Bridges, Highways, Tunnels, Airports, Subways, Harbor Works, Dams, Canals, Traffic Parking and Transportation Reports, Power, Industrial Buildings, Housing, Sewerage and Water Supply.
165 Broadway New York 6, N. Y.

E. Lionel Pavlo
Consulting Engineer
Design, Supervision, Reports
Bridges, Highways, Expressways
Marine Structures, Public Works
Industrial Construction, Airports
642 Fifth Ave. New York 19, N. Y.

The Pitometer Associates
Engineers
Water Waste Surveys
Trunk Main Surveys
Water Distribution Studies
Water Measurements & Special
Hydraulic Investigations
New York, 50 Church St.

PROFESSIONAL SERVICES

Cards arranged by areas, states, cities, names — **Additional cards on preceding and following pages**

Malcolm Pirnie Engineers

Malcolm Pirnie — Carl A. Arenander
Ernest W. Whitlock — Malcolm Pirnie, Jr.
Robert D. Mitchell — Alfred C. Leonard

MUNICIPAL AND INDUSTRIAL
Water Supply—Water Treatment
Sewerage and Waste Treatment
Drainage—Rates—Refuse Disposal

25 West 43rd St., New York 36, N. Y.
3013 Horatio Street, Tampa 9, Fla.

Alexander Potter Associates

Consulting Engineers

Water Works, Sewerage, Industrial Waste, Hydraulic Works, Reports, Designs, Appraisals.

50 Church St., New York, N. Y.

Praeger-Kavanagh-Waterbury

Engineers-Architects

Marine Structures, Ports, Buildings, Military Projects, Special Structures, Beach Erosion, Bridges, Highways, Tunnels, Airports, Transit Facilities, Stadiums, Soils, Foundations, Feasibility Studies, Planning, Supervision.

126 East 38th Street N. Y. 16, N. Y.

Seelye Stevenson Value & Knecht

Consulting Engineers

Richard E. Dougherty, Consultant

Airports, Highways, Bridges, Dams, Water Supply, Sanitation, Railroads, Piers, Industrial Plants, Reinforced Concrete, Steel, Industrial Waste Disposal, Foundations, Soil Studies, Real Estate Development.

Civil — Mechanical — Electrical

101 Park Avenue New York 17, N. Y.

Severud-Elstad-Krueger-Associates

Consulting Engineers

Structural Design - Supervision
Reports - Buildings - Airports
Special Structures

415 Lexington Ave., New York 17, N.Y.

Ole Singstad

Consulting Engineer

Vehicular and Railroad Tunnels, Subways, Ventilation, Expressways, Parking Garages, Air Fields, Foundations, Waterfront Structures.

24 State St. New York 4, N. Y.

Frederick Snare Corporation

Engineers—Contractors

Harbor Works, Bridges, Power Plants, Dams, Docks and Terminals.

Difficult and Unusual Foundations A Specialty

233 Broadway, New York City 7

Havana, Cuba — Lima, Peru
Bogota, Columbia, Caracas, Venezuela

Steinman, Boynton, Gronquist & London

Consulting Engineers

HIGHWAYS - BRIDGES
STRUCTURES

117 Liberty St., New York 6, N. Y.

Tippetts-Abbett-McCarthy-Stratton

Engineers and Architects

Ports, Harbors, Flood Control, Power Dams, Bridges, Tunnels, Highways, Railroads, Subways, Airports, Traffic, Foundations Water Supply, Sewerage, Reports, Design, Supervision, Consultation.

375 Park Avenue, New York 22, N. Y.

Arnold H. Vollmer Associates

Consulting Engineers

Highways, Parks, Bridges, Municipal Improvements, Public Works, Reports, Surveys, Contract Plans.

25 W. 45th Street, New York 36, N. Y.
Telephone: CIrcle 7-6250

Lawrence S. Waterbury

Consulting Engineer

Bowling Green 9-9298
26 Broadway, New York 4

Keis & Holroyd

Consulting Engineers

Formerly Solomon & Keis
Since 1906
Water Supply, Sewage Disposal, Garbage & Refuse Incineration, Industrial buildings.

Troy, N. Y.

Capitol Engineering Corporation

Consulting Civil Engineers

Dillsburg, Pennsylvania, U.S.A.

Gannett Fleming Corddry & Carpenter, Inc.

ENGINEERS

Dams, Water Works, Sewage, Industrial Wastes & Garbage Disposal, Highways, Bridges & Airports
Traffic & Parking — Appraisals, Investigation & Reports.

Harrisburg, Penna.

Branch Offices
Pittsburgh, Pa. Philadelphia, Pa.
Daytona Beach, Fla.

Grof & Myers

Consulting Engineers

Highways — Bridges — Airports
Surveys — Reports — Plans
Construction Supervision

1824 North 4th St. Harrisburg, Pa.

Modjeski and Masters

Consulting Engineers

Bridges and other Structures
Foundations
Highways and Expressways

900 North Sixth St. Harrisburgh, Pa.
Philadelphia - Miami - New Orleans

Albright & Friel Inc.

Consulting Engineers

Water, Sewage, Industrial Wastes and Incineration Problems, City Planning, Highways, Bridges and Airports, Dams, Flood Control, Industrial Buildings, Investigations, Reports, Appraisals and Rates

3 Penn Center Plaza Phila. 2, Pa.

Fridy, Gauker, Truscott & Fridy, Inc.

Architects & Engineers

Water, Sewer, Waste Disposal, Roads, Airports, Power & Lighting, Petroleum Facilities, Hospitals, Schools, Public & Industrial Buildings, Reports, Plans, Supervision, Appraisals.

1321 Arch St. Philadelphia 7, Pa.

Harris-Dechant Associates

Consulting Engineers

Water Supply, Dams, Stream Improvement, Flood Control, Port & Harbor Development; Sanitary & Industrial Wastes; Hydro & Steam Power; Highway Engineering & Design.
Surveys—Reports—Econmics

123 S. Broad St., Philadelphia 9, Pa.

Yule, Sticklen, Jordan & McNee

ENGINEERS

Bridges, Highways, Airports
Design, Investigations, Reports
Supervision of Construction
Civil, Structural Mechanical & Electrical

Cedar Cliff Drive
Camp Hill, Pa.

1225 Vine Street
Philadelphia 7, Pa.

5564 North High Street
Columbus, Ohio

Justin & Courtney

Consulting Engineers

Joel B. Justin - Neville C. Courtney
Dams and Power Problems, Hydroelectric, River Basin Development, Water Supply, Foundations.

121 South Broad Street
Philadelphia 7, Pa.

Hunting, Larson & Dunnells,

Engineers

Industrial Plants — Warehouses, Office and Commercial Buildings, Steel and Reinforced Concrete. Design and Supervision. Reports.

1150 Century Bldg., Pittsburgh, Pa.

Morris Knowles Inc.

Engineers

Water Supply and Purification Sewerage and Sewage Disposal, Valuations, Laboratory, City Planning.

Pittsburgh, Pa.

Pennsylvania Drilling Company

Subsurface Explorations, Grouting, Industrial Water Supply, Mineral Prospecting.
Large Diameter Drilled Shafts, Reports

1205 Chartiers Ave. Pittsburgh 20, Pa.

Michael Baker, Jr., Inc.

Consulting Engineers, Planners & Surveyors: Airport, Highway & Bridge Design; Water & Sewerage; Municipal Engineering; Photo Mapping; City Planning urban Ren. & Redev. Surveys; Soils Lab. Home Office—Rochester, Pa. Br. Off. Jackson, Miss. Charleston, W Va., Harrisburg, Pa.

Swindell-Dressler Corp.

CONSULTING ENGINEERS

Industrial Plants — Waterworks — Sewer Systems — Highways — Dams — Bridges — Surveys — Reports — Design and Construction Supervision

Box 1888 • Pittsburgh 30, Pa.

Sprague & Henwood, Inc.

Drilling Services

Foundation Investigations, Soil Testing & Test Borings, Grout Hole Drilling & Pressure Groating, Diamond Core Drilling

Main Office
221 W Olive Street, Scranton, Pa.

Branches:
1009 Western Savings Fund Bldg., Philadelphia, Pa.
11 W. 42nd St., New York, New York
300 Mt. Lebanon Blvd., Suite 100 Pittsburgh 34, Pa.
Box 2556—Salt Lake City
Nashville, Tennessee
Tucson, Arizona
Buchans, Newfoundland

Frank D. McEnteer's Associates, Inc.

Consulting Engineers

Bridges, Highways, Industrial Plants Design, Investigations, Surveys

Terminal Building, Clarksburg, W. Va.

SOUTH

Palmer and Baker Engineers, Inc.

Consulting Engineers - Architects

Surveys-Reports-Design-Supervision Consultation

Transportation and Traffic Problems
Tunnels-Bridges-Highways-Airports
Industrial Buildings
Waterfront and Harbor Structures
Graving and Floating Dry Docks
Complete Soils, Materials and Chemical Laboratories

Mobile, Ala. New Orleans, La.
Washington, D. C.

Harry Hendon & Associates, Inc.

Engineers

Civil Engineers—Public Utilities
Investigation—Designs
Supervision of Construction

P. O. Box 740A 925 Sligh Blvd.
Birmingham 13, Ala. Orlando, Florida

Rader and Associates

Engineers - Architects

Sewage Disposal, Water Works, Ports, Airports, Bridges, Highways, Office and Commercial Buildings, Industrial Plants. Reports, Investigations, Consultations, Aerial Photography, Photogrammetry.

First Natl. Bank Bldg., Miami 32, Fla.

Standard Drilling Company

Drilling Services

Foundation Investigations, Soil Testing & Test Borings, Grout Hole Drilling, and Pressure Grouting, Diamond Core Drilling.

P.O. Box 174. Somerset, Kentucky.

Eustis Engineering Company

FOUNDATION AND SOIL
MECHANICS INVESTIGATIONS

Soil Borings — *Laboratory Test*
Foundation Analyses — *Reports*

3635 Airline Highway
Metairie, Louisiana

Schmidt Engineering Co. Inc.

Consulting Engineers

Investigations, Reports, Designs, Heavy Construction — Dams — Hydroelectric Projects—Foundation Explorations and Treatment—Water and Sewerage Works

Emerson Building Chattanooga, Tenn.
Greater Tenn. Bldg. Knoxville, Tenn.

ETCO Engineers and Associates

Foundation Consultants

Test Borings — Laboratory Tests
Recommendations, Design and Supervision

2116 Canada Dry St., Houston 23, Tex.
727 Main St. Baton Rouge, La.
427 Carondelet St., New Orleans 12, La.

Mott Core Drilling Co.

Contractors—Manufacturers

Core Borings for Buildings, Bridges, Foundation Soil Tests, Highways, Pressure Grouting, Dams, Mine Shafts
Mineral Prospecting

Mott Bldg. 830 Eighth Ave.
Huntington, 17, W. Va.

MIDDLE WEST

Alvord, Burdick & Howson

CONSULTING ENGINEERS

Water Works	Sewerage
Water Purification	Sewage Treatment
Floor Relief	Power Generation
Drainage	Appraisals

20 North Wacker Drive, Chicago

Consoer, Townsend & Associates

Consulting Engineers

Sewage treatment, sewers, storm drainage, flood control—Water supply and treatment—Highway and bridges—Airports—Urban renewal—Electric and gas transmission lines—Rate studies, surveys and valuations—Industrial and institutional buildings.

360 East Grand Ave. Chicago 11, Ill.

THIS SECTION
is available to consulting engineers to contact prospective clients every week or every other week.

PROFESSIONAL SERVICES

Cards arranged by areas, states, cities, names

Additional cards on preceding and following pages

De Leuw, Cather & Company

CONSULTING ENGINEERS

Public Transit — Subways
Traffic & Parking — Railroad Facilities
Expressways — Industrial Plants
Grade Separations — Municipal Works
Urban Renewal — Port Development

150 North Wacker Drive, Chicago 6
San Francisco — New York — Boston

Erik Floor & Associates, Inc.

Consulting and Design Engineers

Hydroelectric Projects — Dams — Flood Control—Hydraulic Structures—Irrigation — Transmission Lines — Investigations—Reports—Designs

139 N. Clark St. — Chicago 2, Ill.

Greeley and Hansen

Engineers

Water Supply, Water Purification
Sewerage, Sewage Treatment
Flood Control, Drainage, Refuse Disposal

14 E. Jackson Boulevard
Chicago 4, Illinois

Harza Engineering Co.

Consulting Engineers

Hydroelectric Plants & Dams
Transmission Lines
Flood Control, Irrigation
River Basin Development

400 West Madison Street — Chicago 6

Hazelet & Erdal

CONSULTING ENGINEERS

Fixed & Movable Bridges, Expressways, Industrial Plants, Airports, Dams, Monadnock Block, Chicago 4, Ill.
Dixie Terminal Bldg., Cincinnati 2, O.
Commerce Bldg., Louisville 2, Ky.
Oding Bldg., Lansing 33, Mich.

Pioneer Service & Engineering Co.

Consulting and Design Engineers
Operations—Purchasing
Construction Management
Public Utilities—Industrials

231 So. La Salle St. — Chicago 4

Sargent & Lundy

ENGINEERS

Consultants to the Power Industry

Studies • Design • Supervision
140 South Dearborn Street, Chicago 3, Ill.

Suhr, Peterson, Peterson & Suhr

Consulting Engineers

REPORTS—PLANS—SUPERVISION
Sewerage, Water Supply, Flood Control & Drainage, Airports, Roads, Surveys
Fixed & Movable Bridges

130 N. Wells St., Chicago 6, Ill.
P. O. Box 1858, Anchorage, Alaska

American Testing and Engineering Company

Soils Engineering & Testing
Test Borings—Core Drilling
Field Inspection & Control

5204 E. 25th St. Indianapolis 18, Ind.

Chas. W. Cole & Son

Engineers and Architects

3600 E. Jefferson Blvd.
South Bend, Indiana

2112 W. Jefferson St.
Joliet, Illinois

The Hinchman Corporation

Consulting Engineers

"WORLD-WIDE ACTIVITIES"
Survey • Design • Supervision
Specializing In
Corrosion Control•F.C.C. Certification Tests
Electromagnetic Interference Studies
Francis Palms Bldg., Detroit, Michigan

The H. C. Nutting Company

Testing Engineers—Inspection Service
Foundation Investigation—Test Borings
Soil Mechanics—Sewage Flows
Construction Control—Concrete
Water Waste Survey

4120 Airport Road — Cincinnati 26, O.

The Austin Company

Design and Construction
Manufacturing and Process Plants
Newspaper and Broadcasting Bldgs.
Power Plants—Industrial
Industrial Office Buildings and Laboratories
Merchandising Bldgs. & Facilities
Plant Location Surveys

New York — CLEVELAND — Houston
Chicago — Montreal — Los Angeles
Detroit — Seattle

Havens and Emerson

A. A. Burger, H. H. Moseley, J. W. Avery, F. S. Palocsay, E. S. Ordway, A. M. Mock, G. H. Abplanalp, S. H. Sutton
Frank C. Tolles, Consultant
Water, Sewerage, Garbage, Industrial Wastes, Valuation—Laboratories

Leader Bldg. — Woolworth Bldg.
Cleveland 14 — New York 7

The Osborn Engineering Co.

DESIGNING-CONSULTING

Industrial Plants — Office Buildings
Stadiums — Grand Stands — Field Houses
Bridges — Garages — Laboratories

7016 Euclid Ave. — Cleveland 3, Ohio

Rackoff Associates

Engineers

Highways, Expressways, Bridges, Sewerage and Water Systems, Fiscal and Master Planning, Investigations, Urban Renewal, Supervision

867 So. James Road, Columbus 13, Ohio

Slocum & Roberts

Construction Consultants

Heavy Construction Project Investigations, Planning, Estimating & Bidding, Plant Layout & Management

504 E. Pine St. 11820 Edgewater Drive
Alhambra, Calif. — Lakewood 7, Ohio

Jones, Henry & Williams

Consulting Sanitary Engineers

Water works — Sewerage & Treatment
Waste Disposal

2000 W. Central Ave., Toledo 6, Ohio

Toledo Testing Laboratory

Engineers—Chemists

Concrete—Soils—Asphalt
Inspection — Research
Tests — Development
Foundation Investigation
Borings—Diamond Drilling
Load Tests
Soils Mechanics Laboratory

1810 North 12th St. — Toledo 2, Ohio

WEST OF MISSISSIPPI

Heron Engineering Co.

Consulting Engineers

For all types of Aerial Tramways, Cableways, and Suspended Structures

2000 South Acoma St.
Denver 23, Colorado

CHECK

this section whenever you need professional advice.

Stanley Engineering Company

Consulting Engineers

Hershey Building, Muscatine, Ia. — 208 S. LaSalle St., Chicago 4, Ill.
Hanna Building, Cleveland 15, Ohio

R. L. Loofbourow

Consulting Mining Engineer

Site Tests, Plans, Estimates & Supervision for Underground Construction, Mining and Control of Rock and Water.

4032 Queen Ave So., Minneapolis 10, Minn.

Black & Veatch

Consulting Engineers

Water - Electricity - Sewage - Gas - Industry - Reports, Design, Supervision of Construction, Investigations, Valuation and Rates.

1500 Meadow Lake Parkway
Kansas City 14, Missouri

Burns & McDonnell

Engineers—Architects—Consultants

4600 E. 63rd St. Trafficway
Kansas City 41, Missouri

Russel and Axon

Consulting Engineers

Civil — Sanitary — Structural
Industrial — Electrical
Rate Investigations

408 Olive St. — St. Louis 2, Mo.
Municipal Airport, Daytona Beach, Fla.

Sverdrup & Parcel Associates, Inc.

Engineers—Architects

Bridges, Structures and Reports, Industrial and Power Plant Engineering

915 Olive St., St. Louis, 1, Mo.
417 Montgomery St., San Francisco Calif.

Benham Engineering Company

Established in 1909

Design and Consulting Engineers

215 N E 23rd Street
Oklahoma City 5, Oklahoma

Spencer J. Buchanan and Associates, Inc.

Consulting Engineers

Soil Mechanics and Foundation Engineering. Civil Engineering Services Reports, Design and Field Supervision.

310 Varisco Building, Bryan, Texas
TAylor 2-3767

Soil Mechanics Incorporated

Foundation Exploration and Testing Services

Site Investigations, Soil Borings, Field and Lab Testing, Load Tests, Reports

310 Varisco Building, Bryan, Texas
TAylor 2-3767

Dames & Moore

Consultants in

Applied Earth Sciences
Soil Mechanics — Engineering Geology
Geophysics

Atlanta, Chicago, Honolulu, Houston, Los Angeles, New York, Portland, Salt Lake City, San Francisco, Seattle.

Lockwood, Andrews & Newnam

Consulting Engineers

Navigation Facilities — Public Works
Airports — Earthworks — Roads
Structural, Mechanical — Electrical
Reports — Design — Supervision
Surveys — Valuations

Corpus Christi—Houston—Victoria, Texas.

ALWAYS READY

Yes, these consultants are always ready to help you with any problem concerning engineered construction. Call on them with the assurance that you will be receiving the finest of professional advice.

FAR WEST

International Engineering Company, Inc.

ENGINEERS

Investigation - Reports - Design
Procurement - Field Engineering
Domestic and Foreign

74 New Montgomery St.
San Francisco 5, California

Jacobs Associates

Consulting Construction Engineers

TUNNELS—DAMS
EARTHMOVING—FOUNDATIONS
Methods, Cost Estimates, Plant Design, Management, Surveys, Engineering Geology, Materials Handling

503 Market St., San Francisco 5, Calif.

Nevada Testing Laboratories, Ltd.

Engineering—Civil—Soils & Foundation Consultants—Field Testing—Soil Borings — Rock Drilling — Materials Field Control—Load Tests—Laboratory Testing—Soils—Concrete—Asphalt

300 W. Boston Ave. — Las Vegas, Nev.

AERIAL SURVEYS

American Air Surveys, Inc.

AERIAL TOPOGRAPHIC MAPS & AERIAL PHOTOS FOR
• Highways • Airports • Power & Pipe Lines • Railroads • Mining • All types construction • Stockpile Inventories

907 Penn Ave. — Pittsburgh 22, Pa.
Branches-Manhasset, N.Y.-Atlanta, Ga.

ESTIMATING

Estimating Services Associates, Inc.

Professional Construction Estimators

Working in close cooperation with your Architect, Engineer, or Consultant to prepare completely detailed preliminary budget estimates on all types of commercial and industrial construction.

Long range budgeting for Schools-Colleges-Urban Renewal-Processing Plants-Hospitals.

Cost preparation for bond issues.

ANYWHERE IN THE WORLD

Main Office-124 LaSalle Rd.
West Htfd, Conn.

GEOLOGISTS

Geologic Associates

ENGINEERING GEOLOGISTS

Studies and Reports
Foundation Investigations
Specialized Drilling and Sampling

Brentwood, Tennessee
Phone (Nashville) VErnon 2-1748

GEOPHYSICISTS

Alpine Geophysical Associates, Inc.

Geophysicists-Engineers-Oceanographers

Land and Marine Foundation Surveys
Highways-Bridges-Tunnels-Buildings
Consultants-Earthquake-Oceanographic

10 Oak Street — 2418 Tangley
Norwood, New Jersey — Houston, Texas

INSPECTION & TEST

Johnson Soils Engineering Laboratory

Foundation Design - Highway & Airport Pavements - Construction Control - Load Tests Shear & Consolidation Tests - MOBILE LABORATORIES

193 West Shore Ave., Bogata, N. J.
Bogata-Hubbard 7-4408

Pittsburgh Testing Laboratory

A national service-with complete laboratory and inspection facilities.
Laboratories in principal cities.
Main Office: 1330 Locust St., Pittsburgh, Pa.

ADVERTISERS IN THIS ISSUE

Allis-Chalmers 6-7
Aluminum Company of America..... 57
American Vitrified Products Company..... 5
Armco Drainage & Metal Products, Inc.... 67

Bethlehem Steel Co.....28-29; 71
Blaw-Knox Co., Blaw-Knox Equipment Div. 86

Cleveland Tramrail Div., Cleveland Crane & Engineering Co..... 73
James B. Clow & Sons, Inc..... 42
The Colorado Fuel & Iron Corp., Wickwire Spencer Steel Div.....38-39
The Commercial Shearing & Stamping Co.. 43
Concrete Reinforcing Steel Institute..... 53
Contractors Register 56

D-A Lubricant Company, Inc..... 4
Richard Dudgeon Inc..... 64

Engelhard Hanovia, Inc., Industrial Diamond Division 35
Euclid Div., General Motors Corp..... 76

Fairbanks, Morse & Company..... 46

The Goodyear Tire & Rubber Co., Truck Tires Dept. 1
Granco Steel Products Co.....60-61
Griffin Wellpoint Corp..... 18

International Business Machines Corp..... 58

Jenkins Bros. 16
Johns-Manville Corp. 15; 44-45

Lehigh Portland Cement Company..... 68

Mack Trucks, Inc.....49-52
Marchant Div. of Smith-Corona Marchant Div. 11
The Master Builders Company.....3rd Cover
McGraw-Hill Book Co., Inc..... 83
Mobile Drilling, Inc..... 69

National Clay Pipe Manufacturers, Inc.... 72
National Gypsum Company..... 65
Neenah Foundry Company..... 47
Northwest Engineering Co..... 3

Ozalid Div., General Aniline & Film Corp. 63

Pittsburgh-Des Moines Steel Company.2nd Cov.
Portland Cement Association..... 54
Posey Iron Works, Inc..... 53
Press-Seal Gasket Corp..... 10
Prestressed Concrete Institute..... 20

Reda Pump Company..... 81
Rodgers Hydraulic, Inc..... 56

Stran Steel Corp., Div. National Steel Corp. 14
Superior Concrete Accessories, Inc..... 12
Symons Clamp & Mfg. Co..... 2

Templeton, Kenly & Co..... 81
Thew Shovel Co.....78-79
E. A. Thompson Co., Inc..... 41
Timber Structures, Inc..... 48
Tretol, Inc. 53

U. S. Pipe & Foundry Company.....84-85
U. S. Steel Corp.....8-9; 74-75
Universal Atlas Cement Co. Div., U. S. Steel Corp. 13

Vibroflotation Foundation Co..... 40

Worthington Corp. .....32; 4th Cov.

Professional Services 96-98

CLASSIFIED ADVERTISING

F. J. Eberle, Business Mgr.

Employment Opportunities 92-94
Notices
Proposals 89-92
Equipment
(Used or Surplus)
(For Rent, Sales Wanted).....94, 95

ENGINEERING NEWS-RECORD

330 West 42 St., New York 36—LOngacre 4-3000

ABP Member ABC

Number of copies of this issue printed 87,595

D. S. ROBERTSON, Advertising Sales Manager
HUGH J. CARLSON, Business Manager
LANG CARPENTIER, Production Manager
JACK NEVINS, Assistant Production Manager

ADVERTISING REPRESENTATIVES

Atlanta, 9—1375 Peachtree St., N.E., Robert H. Powell, Jr.

Boston, 16—McGraw-Hill Bldg., Copley Square C. D. Neulen

Chicago 11—645 North Michigan Ave. L. H. Hunt, W. G. Payne

Cleveland, 13—1164 Illuminating Bldg., 55 Public Square H. A. Bergstrom, F. P. DiToro

Dallas, 1—Vaughn Bldg., 1712 Commerce St., John Grant

Denver, 2—Tower Building, 1700 Broadway J. W. Patten

Detroit, 26—856 Penobscot Bldg. Earl S. Moore, Jr.

Houston, 25—Prudential Bldg., Holcombe Blvd.—Joseph C. Page

Los Angeles, 17—1125 W. Sixth St., Knox Bourne, S. S. Tiebout

New York, 36—500 5th Ave. C. D. Neulen, H. T. Olsen Robert L. Barker

Philadelphia, 3—Six Penn Center Plaza George K. Smith Patrick Kelleher

Pittsburgh, 22—4 Gateway Center Malcolm Russell

Portland 4, Oregon—Room 445, Pacific Bldg. Scott Hubbard

St. Louis, 8—Continental Bldg., 3615 Olive St. E. B. Mingle, Jr.

San Francisco 11—255 California St. John J. Hernan

OTHER SALES OFFICES:

United Kingdom, Edwin E. Murphy, 34 Dover Street, London W.1—Germany, Austria, Stan Kimes, 85 Westendstrasse, Frankfort/Main, Germany—Switzerland, Italy, France and Belgium, Michael R. Zeynel, 2 Place du Port, Geneva, Switzerland

CONSTRUCTION BUSINESS NEWS... streamlined... highlighted...

for TOP MANAGEMENT

- **capsule, synopsis reporting**
- **fast—2-level reading**
- **supporting detail—for convenient routing to department heads and specialists**

New business coming up . . . price and cost movements . . . labor relations . . . construction business outlook . . . special situations . . . where the construction dollars are going . . . where they are coming from . . . foreign jobs . . . Government actions affecting construction . . . spot industry news . . . major project reports

See for yourself how easy it is to keep ahead of the news with

CONSTRUCTION DAILY . . . NEWSLETTER

A McGraw-Hill Service

A 3-month test offer

You can test the special benefits to you for three months at the quarterly rate of $50:

A bonus for starting now:

You get a two weeks (ten issues) service at no additional cost by entering your 3-months subscription this month.

Be first to know what is happening, start your CONSTRUCTION DAILY NEWSLETTER Service NOW:

CONSTRUCTION DAILY
28th Floor—330 West 42nd St.,
New York 36, N. Y.

O.K.—Enter a three-month trial subscription to CONSTRUCTION DAILY NEWSLETTER at a cost of only $50.00 (this offer includes free copies for an additional 10 issues if order is mailed within two weeks). This offer covers daily copies of the NEWSLETTER—sent by 1st class mail. Or, if you prefer a year at $155, check here ☐

☐ Payment enclosed

Name ..... Position.....
Address .....
Postal
City..... Zone.... State.....
Name of Company.....
Type of Business.....

ENR-T4

Editorials

Brinksmanship on the Delaware

IT'S A BAFFLING JOB to try to figure out what motivates Interior Secretary Stewart Udall in his continued effort to alter the proposed interstate-federal compact for the Delaware River Basin.

A bill establishing the compact, which would set up a commission to plan and carry out comprehensive development of the basin's water resources, is now under Senate consideration. It has already gained the approval of all four of the state legislatures and governors concerned as well as the U.S. House of Representatives. The Secretary professes acceptance of the measure, but nevertheless endangers it by pressing for an amendment stipulating that commission power projects must give preferential rates to municipal and public agencies and cooperatives. The puzzling fact is that this issue is inconsequential, in so far as compact projects are concerned.

It has taken years of study, often frustrating, with failures along the way, for Pennsylvania, New Jersey, Delaware and New York to find a Delaware plan on which they could agree. However, agreement once is not agreement again. If anybody wanted to sabotage the compact now, he could adopt no better tactic than to force it to run the legislative gamut again. Politics being what it is, the second time around could be fatal, even without a controversial amendment.

Mr. Udall makes no secret of the fact that he dislikes the compact. He openly opposed it at one time. However, he now says he will go along with it because it is preferable to the only alternative at the moment—the status quo. Why then does he jeopardize it?

The practical power considerations are what make Mr. Udall's position incomprehensible. First of all, there is nothing in the wording of the proposed compact to affect present federal policy regarding sale of power produced at federal dams. Power generated at future Corps of Engineers powerhouses in the Delaware Basin would still carry preferential rates for public agencies and cooperatives unless the federal government unilaterally decided otherwise.

Secondly, the hydro-power at issue is a drop in the bucket. The Corps of Engineers reported that peak power demand in the Delaware River service area was 11.1 million kw in 1957 and estimated that it would increase to 17.5 million kw by 1965, 34 million kw by 1980 and 96 million kw by 2010. In contrast, dependable hydroelectric capacity would total only 373,000 kw at the only two sites where hydroelectric generation is contemplated under the Corps of Engineers' recently completed comprehensive development plan for the basin's water resources. This is slightly more than 1% of the area's 1980 needs. Surely, to increase the risks of defeat for a measure so important from the standpoint of flood control, recreation and industrial planning, Secretary Udall must have more in mind than preferential rates on such a piddling proportion of the Delaware Basin's power needs. But what does he have in mind?

If the Secretary isn't playing some bigger game, and if he means it when he says he will go along with the compact, he ought to stop practicing brinksmanship with the compact's chances.

Better Than a Boom

AMIDST THE TALK OF BUSINESS EXPANSION in many sectors of the economy there has been little mention of construction. This should be no cause for alarm since all construction other than housing is already at a high level, while most of the headlined recoveries are starting from a badly depressed base. For construction, steady growth from a reasonably high base would be better than a boom in any event. And signs are beginning to appear that this growth is in the offing.

For one thing, if the heralded business expansion continues to blossom, as seems increasingly likely, industry's expenditures for plant will increase. In fact, contracts for industrial plants showed new strength in August after a June-July sag, and announced plans for new projects have taken such a sharp upturn as to raise expectations that next year's contract totals may register as much as a 20% rise.

Belief in renewed business vitality has also had its effect on proposed new commercial building projects. These are appearing in such volume that contracts, already up 4% over last year, may increase this lead to 12% for 1961 as a whole, and then add another 12% in 1962. Should such be the case, commercial building work will have registered four consecutive record years. This kind of growth is clearly to be preferred to a boom that too quickly spends its momentum.

Construction can count on growth from other sources too. Where private construction, like industrial and commercial building, has business improvement as a stimulant, public construction seems destined to receive an added push from domestic and worldwide political events. On the domestic side the Kennedy Administration, by campaign promises and subsequent deeds, seems tied to a freer spending policy than has been in vogue for some years. Internationally, Berlin, a resumption of atomic testing and other alarms permit no letup in defense construction expenditures.

There is in addition the highway program, finally on a continuing high level basis, and the man-in-space program where large construction expenditures accompany the vastly larger expenditures for hardware.

Total contracts for heavy construction this year should exceed $23 billion, and thus be 2% ahead of last year. ENR's present guess, explained in last week's issue, page 19, is that 1962 will register a further gain of 11%. This will not be a boom, but it will be growth, which is better for the country and for construction.

As in Atlanta today...

Where there's progress... there's POZZOLITH concrete

The men who designed and built these impressive structures specified and used POZZOLITH—today's most effective water-reducing additive for improving concrete. The results—*scientifically produced concrete* with architectural and structural qualities far superior to plain concrete or concrete produced with any other additive. For full information, see your Master Builders man, or write to *The Master Builders Company • Division of American-Marietta Company • Cleveland 18, Ohio • World-wide manufacturing and service facilities.*

1. FIRST NATIONAL BANK BUILDING • Architect: Francis P. Smith • Structural Engineer: Robert G. Lose • General Contractor: Daniel Construction Co. of Georgia • POZZOLITH Ready-Mixed Concrete: Stockbridge Stone Division of Vulcan Materials Co. and Peavy Concrete Co. • Lightweight Aggregate: Georgia Lightweight Aggregate Co.—all of Atlanta.

2. ELECTRIC BUILDING • Owner: Georgia Power Co. • Architects: Finch, Alexander, Barnes, Rothschild and Paschal • Structural Engineer: Chastain & Tindel • General Contractor: Henry C. Beck Co. • POZZOLITH Ready-Mixed Concrete: MacDougald-Warren, Inc. and Peavy Concrete Co.—all of Atlanta.

3. PEACHTREE-BAKER BUILDING • Architects: Finch, Alexander, Barnes, Rothschild and Paschal • General Contractor: Consolidated Realty Investments, Inc. • POZZOLITH Ready-Mixed Concrete: Campbell Materials Co.—all of Atlanta.

4. MERCHANDISE MART • Architect: Edwards and Portman • Structural Engineer: Jack K. Wilborn • General Contractor: Consolidated Realty Investments, Inc. • POZZOLITH Ready-Mixed Concrete: MacDougald-Warren, Inc. and Peavy Concrete Co. • Lightweight Aggregate: Georgia Lightweight Aggregate Co.—all of Atlanta.

5. DIXIE PARKING DECK • Architect: Heery & Heery • Structural Engineer: Chastain & Tindel • General Contractor: Wesley & Co. • POZZOLITH Ready-Mixed Concrete: MacDougald-Warren, Inc. • Lightweight Aggregate: Georgia Lightweight Aggregate Co.—all of Atlanta.

6. FULTON NATIONAL BANK BUILDING • Architect & Engineer: Wyatt C. Hedrick, Dallas, Texas • General Contractor: Henry C. Beck Co. • POZZOLITH Ready-Mixed Concrete: MacDougald-Warren, Inc. and Peavy Concrete Co. • Lightweight Aggregate: Georgia Lightweight Aggregate Co.—all of Atlanta.

7. DINKLER PLAZA ANNEX • Architect: Finch, Alexander, Barnes & Paschal, Atlanta • Structural Engineer: Armstrong & Edwards, Atlanta • General Contractor: Byck-Worrell Construction Co., Savannah • POZZOLITH Ready-Mixed Concrete: Whitley Ready Mix Concrete Co., Atlanta and Decatur.

8. BANK OF GEORGIA BUILDING • Architect & Engineer: Hedrick & Stanley, Dallas, Texas • General Contractor: Henry C. Beck Co. • POZZOLITH Ready-Mixed Concrete: MacDougald-Warren, Inc. • Lightweight Aggregate: Georgia Lightweight Aggregate Co.—all of Atlanta.

9. FEDERAL RESERVE PARKING DECK • Architects: Toombs, Amisano & Wells • Structural Engineer: Chastain & Tindel • General Contractor: Barge & Co. • POZZOLITH Ready-Mixed Concrete: D. B. Thornton Co.—all of Atlanta.

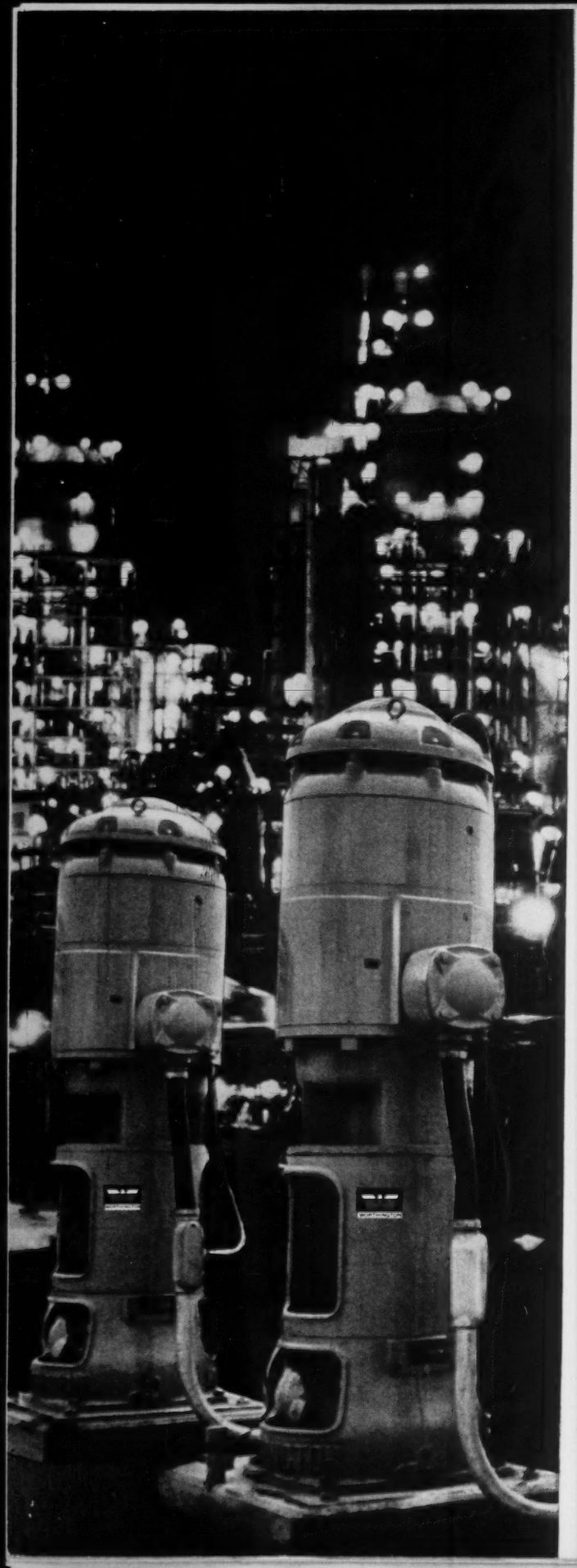
10. FEDERAL RESERVE BANK BUILDING ADDITION • Architect: Toombs, Amisano & Wells, Atlanta • Structural Engineer: Chastain & Tindel, Atlanta • General Contractor: Batson-Cook Co., West Point, Ga. • POZZOLITH Ready-Mixed Concrete: Whitley Ready Mix Concrete Co., Atlanta and Decatur • Lightweight Aggregate: Georgia Lightweight Aggregate Co., Atlanta.

11. RICH'S DEPARTMENT STORE FOR HOMES • Architect: Toombs and Creighton, Atlanta • Structural Engineer: Robert G. Lose, Atlanta • General Contractor: Capital Construction Co., Atlanta • POZZOLITH Ready-Mixed Concrete: Whitley Ready Mix Concrete Co., Atlanta and Decatur.

12. CIVIL CRIMINAL COURTS BUILDING • Architect: Thomas Bradbury • Structural Engineer: Armstrong & Edwards • General Contractor: Daniel Construction Co. of Georgia • Lightweight Aggregate Supplier: Georgia Lightweight Aggregate Co.—all of Atlanta • POZZOLITH Ready-Mixed Concrete: Whitley Ready Mixed Concrete Co., Decatur and Atlanta.

MASTER BUILDERS.
POZZOLITH*

*POZZOLITH *is a registered trademark of The Master Builders Co. for its ingredient for concrete which provides maximum water reduction, controls rate of hardening and increases durability.*

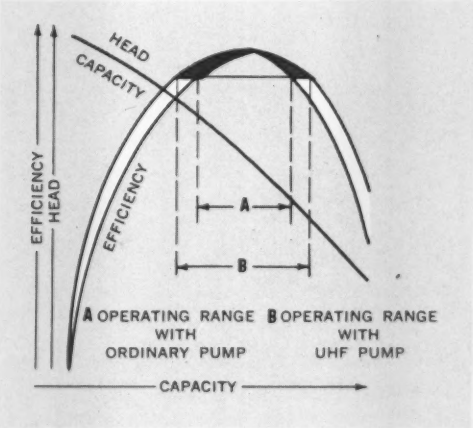


UHF PUMPS COST LESS TO RUN

...Up to 4% More Efficient

Yes, the new Worthington UHF pumps cost less to run. New design formulas and new surface finishing techniques have increased efficiency up to 4%. This means sharp operating cost cuts . . . when you remember that as little as 1% increase in average efficiency during an 8,000-hour pumping year will save you $800 on a 500-hp pump.

And look at the chart. The efficiency of the UHF-designed pump remains higher through a much broader range of the head-capacity curve. Or, at any given operating point away from peak, its efficiency will exceed that of the ordinary pump. Either way you save power.



UHF pumps are available in four basic types: UHF Well Pumps for any industrial or municipal shallow or deep well job; UHF Vertical Industrial Pumps with special hydraulic and mechanical design; UHF Can Pumps for handling critical NPSH problems and simplifying installations; and UHF Submersibles for concealed, quiet installations and some special deep well applications.

For more information about UHF pumps, call your Worthington representative listed in the Yellow Pages. Or write to Vertical Pump Division, Worthington Corporation, Denver, Colorado. In Canada, Worthington (Canada) Ltd., Brantford, Ontario.

WORTHINGTON

PRODUCTS THAT WORK FOR YOUR PROFIT